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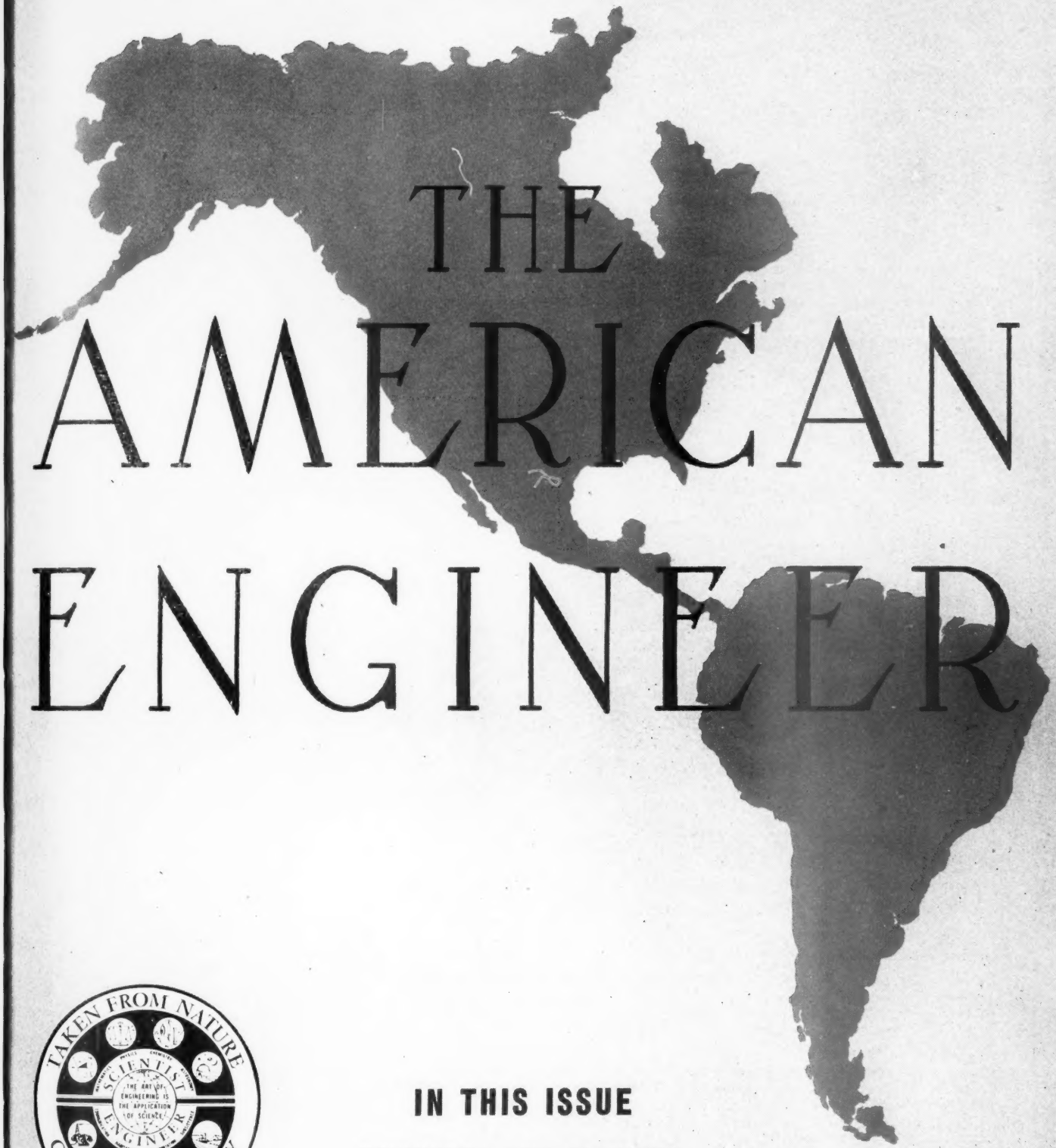

THE AMERICAN ENGINEER

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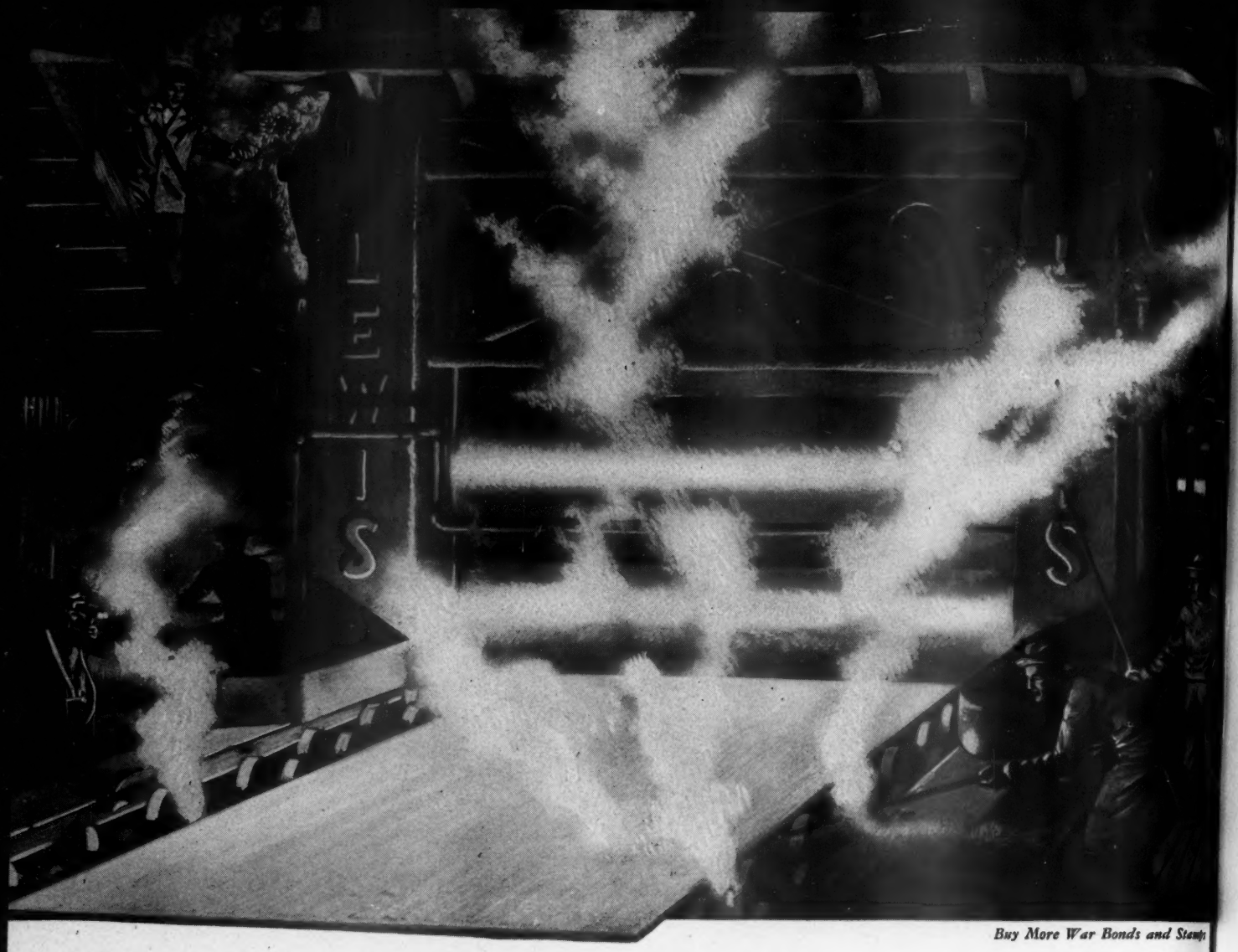
IN THIS ISSUE

ENGINEERS AND PLANNING

APRIL · 1944



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THE AMERICAN ENGINEER

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Some Reflections

ON THE RESPONSIBILITY OF THE ENGINEER

In The World Of Industry

WHICH DEPENDS ON HIM FOR EXISTENCE

BUT IGNORES HIM IN ITS ECONOMICS

This issue of The American Engineer contains an interesting address recently delivered to the New Jersey Society of Professional Engineers. In the course of his discussion the speaker refers to the constructive contributions of the engineer to civilization. He builds up in some detail the evolution of imagination and accomplishment as given expression to by the scientist and engineer. Having completed the credit side of the ledger he points to an unbalanced account of human improvement and suggests that the engineer, in contributing to the welfare of mankind, has robbed it of an economic desideratum—Independence of Livelihood. He then outlines a program for meeting post-war economic problems.

That the engineer has provided the setting for modern civilization and the means whereby practically all men earn their livelihood is a contention so obvious that none need dispute. That he likewise has a responsibility for the effect on society of his contributions to civilization is a contention recognized by the engineer fully as much as by the rest of society. However the address totally disregards the indisputable fact that the engineer has played an insignificant role in the shaping of human policies, social, economic and political. Not the engineer but others have attempted to run, regulate and direct the civilization born of his contributions. To contend that the designer of a ship, plane or automobile is the cause of disaster resulting from the ineptitude of pilots or drivers is neither logical nor warranted unless the pilot or driver be the designer, or at least possessed of his understanding. To suggest that the engineer is responsible for society's inability to understand, or inclination to exploit and misuse, the productions of his mind and skill is equally without basis either in fact or in logic.

The author of the address in his much appreciated discussion points to the peculiar opportunity and responsibility of the engineer in the post-war world. With this point of view the engineer is in complete accord. He also points to the existence of a Committee for Economic Development and suggests that in his opinion it represents the best and most practical organizational means of assuring a satisfactory post-war American economy. The Committee, he states, is made up of plain-down-to-earth citizens who have worked their way up to their present positions and who have no selfish motives. With all this, one can take no issue. Their aims and methods may be accepted for their face values. But he offers no indication that the members of the Committee for Economic Development, as is also the case with so many planning groups, appreciate that the economic order of tomorrow must be integrated with the cause of tomorrow's form of civilization. Either the economist must become an engineer or the engineer an economist, not in the absolute perhaps, but at least in degree.

We are informed that the Committee for Economic Development is equipped to assist companies and communities, as well as to give advice on planning, and that it maintains "one of the brainiest research organizations ever assembled." In support of this several individuals are cited. The emphasis seems to be heavily on economists. Distribution of goods, depressions, business leadership, economic machinery, unemployment evils, production, ignorance and forced poverty are among the problems to be attacked by the Committee. There is nothing in the discourse that leads one to believe that the most indispensable factor in modern civilization, that which provides the means of production, of distribution, of mass employment and of exchange, has any fundamental role in the program. Independent American business is noted as the panacea for economic ills. The principal contact suggested for the engineer appears to be not with the steering or policy group, but with community chairmen. This is unquestionably a well-intended suggestion. But with a national economic scheme of things in mind, one wonders who so well as the engineer could be entrusted with national leadership and why the knowledge and training of so constructive a profession should be stressed only in local problems. The major cause of this civilization, material though it be, must play a major role if its influence is to be felt in tomorrow's plans.

No economic system, conceived, launched or advocated without the engineer as a co-author can long endure. Engineering, not political economy as heretofore preached or practised, can free the world from unnecessary poverty. Engineers, with moral aims and with authority, manpower and natural resources, could change India into a thriving land within half a century. No economic order yet conceived could do so in half a millennium, except through the medium of engineering.

Yes, engineers have a great responsibility. But industrialists, economists, public officials, labor leaders and others have an even greater one. Let them give to the engineer the opportunity to help administer the society for which he is so largely responsible. Let them appoint him to formulate some of the plans for tomorrow's social and economic aspirations. He cannot transmute theories and doctrines into realities unless their premises are capable of his acceptance. Nor can others, unfamiliar with the processes of thought and the methods of verification inseparable from the correct application of nature's endowments to man's ends, as evidenced by the contributions of the engineer to civilization, hope to give to society a lasting economy without his participation in its formulation and administration.

THE ROLE OF THE ENGINEER

NEW TECHNIQUES, NEW MATERIALS, NEW APPLICATIONS

WILL AFFORD NEW OPPORTUNITIES

FOR A MORE LIVABLE AND BEAUTIFUL WORLD

IN THE POST WAR ERA

ENGINEERING THE MEANS TO SUCH END

By DAVID B. STEINMAN

D. B. STEINMAN
Past President, N. S. P. E.

This article is a synopsis of an address by Past President D. B. Steinman of the National Society of Professional Engineers. The author sets forth his faith in the engineer as the means to a better civilization. The discovery and development of new materials, together with new applications of chemistry and electricity, will call for increased resourcefulness and will provide increased opportunities for the engineer to better serve mankind. American engineering and American initiative will shortly find a world wide outlet. The destruction of war will but serve to stimulate building anew.

The present war is primarily a contest of technological progress and resourcefulness expressed in productive capacity. Engineering is winning the war, and engineering will have the task of reconstruction.

The war cataclysm produces powerful and insistent pressure upon technologically trained men for new ideas, inventions, materials, processes, machines. The war period has already made fundamental disclosures upon which new and far-reaching industries will be based. The landscape of the future will be transformed by the new developments in transportation. Residential areas will be transformed by new developments in housing and town-planning. The industrial picture will also be changed. Strange looking factories, making strange, new things, will use workmen to do tasks which imagination is just beginning to outline.

War stimulates discovery and accelerates its applications. War problems are insistent. Directness and intelligence of attack are imperative. The testing of results is done promptly and in terms of human values. The validity of ideas and of their application reaches a high level.

It is fortunate that deep-rooted stabilities of emotional and mental inheritance enable civilization to survive the strains of war and the shocks of disaster. However great the suffering and the strain, after crises pass the human spirit rebounds, sometimes to a golden age. On the basis of the records of history we may be confident that after the close of the present war more splendid cities will be built on the ruins of those that have been destroyed.

Large-scale programs have already been planned for "beating swords into ploughshares." The largest companies manufacturing powder for munitions are planning to convert their plants to the expanded production of non-explosive lines after the war—phenol formaldehyde and vinyl resin coatings, ethyl cellulose plastics, pyroxylene coated fabrics, artificial leather, sugar alcohols, pharmaceuticals, and dyes. The chemical companies will spend many millions of dollars on new plants in their post-war program. Post-war plans have already been made for doubling the production of plastics. Electric furnaces for producing steel now have a capacity of 5,000,000 tons a year, or over five times their pre-war capacity. The automotive industry, with $15,000,000,000 of plants now used for war-production, is planning a 50 percent increase in output of automobiles and trucks above pre-war levels. The U. S. Government has spent $10,000,000,000 to construct some 2000 war plants, and these await early reconversion to peacetime uses.

In the challenging task of reconverting, reconstructing, and reshaping the post-war world, the engineer will have an indispensable role. There will be the work of rebuilding that which has been destroyed—the homes and the industrial plants, the bridges and the highways, the ports and the harbors, the waterworks and the sanitary systems. There will be the work of replanning—new residential areas, new housing, new road systems, new parkways and express-highways, new airports and airways. There will be the work of transforming and expanding the structure in which industry functions. And in all of this work there will be new high standards born of a new idealism, a new appreciation of human values—new high standards of efficiency, of beauty, of human betterment.

The post-war period will usher in a new era of transportation. Air-lines are planning for 500 trans-Atlantic passengers a day. Future development will include serving many more cities and towns directly through feeder systems using smaller planes and helicopters to gather

(*Continued on page* 24)

THE FUTURE OF ENGINEERING

SHALL IT REMAIN A PROFESSION

DOES COLLECTIVE BARGAINING AFFORD JUSTIFICATION

FOR FORSAKING PROFESSIONAL METHODS

IN SEEKING SOCIAL AND ECONOMIC STATUS

COMMENSURATE WITH SERVICES RENDERED

An Analysis of the Subject

By JAMES F. FAIRMAN

PRESIDENT JAMES F. FAIRMAN
New York State Soc. Prof. Engs.

For many months the subject of Collective Bargaining has been discussed by state and chapter units of N.S.P.E. The author of this discussion, President of the New York State Society, has for some years been in a position to observe some of the so-called independent unions at work. His observations and his conclusions have been applied to an analysis of the proposal to form collective bargaining units for professional engineers. He supports the position of President Nold and many other members of N.S.P.E. who believe that an apprenticeship in a large labor organization only strengthens the young engineer in his pursuit of professional status and ultimate affiliation with a professional study.

About a year ago, I was asked to answer this question—"What will I get out of the Society if I join it?" My answer at that time was—"Not a damn thing more than you put into it." That is still my answer. Incidentally, I have been criticized for making that profane and undignified statement, but I continue to make it because I believe it is a clear and arresting expression of a profound truth. I know it sums up my experience, not only in this Society but in all my other activities.

"What will I get out of the Society if I join it?" Frankly, gentlemen, nothing—if you approach it in that spirit. Elaborating my answer I expressed the conviction that membership in an organization such as N.S.P.E. is an opportunity for service rather than a place in the bread line. I still think so and I have been heartened by the continuing evidences that I am not alone in this conviction. For example, President Harry E. Nold of the National Society put it this way in an address before the Minnesota Society last June. He said, "Membership and work in the Society should be approached in a spirit of service; service to the public and service to the profession. It should be recognized that the value of such service cannot be measured in terms of increased dollars in the pockets of the engineers rendering such service. We engineers are just as selfish as other human beings. The instinct of self-preservation and economic improvement is strong, and rightly so, but we must recognize that, to a large extent, the work we are doing today is going to help the next generation of engineers, rather than ourselves. We must be willing to do much work for our profession, accepting in payment, the satisfaction of having done something worthwhile." To these remarks of our National President, I wholeheartedly subscribe.

If you were to ask me what I have gotten out of being a member of the Society, I would say that, in addition to the fun and the headaches, the good fellowship and the hard work, I have gained an entirely new and a much broader point of view of our opportunities and our responsibilities as members of a profession. It is from this point of view that I shall discuss the problem of unionization and its relation to engineers, a problem about which much discussion is being had in our ranks and about which I have been asked to speak to you.

In any consideration of this problem by our chapters, by our state societies and by our National Society, it seems to me to be of paramount importance that our deliberations should be objective rather than emotional and that we should deal with facts rather than with fears. The manner in which we treat this problem may be the supreme test of our ability as a professional group wisely to handle problems involving other than physical phenomena. I may have missed some very constructive discussions of the subject but in those I have heard, emotion seemed to play too great a part. Nonetheless, I have faith that engineers, by their training and inheritance, are essentially a group of people more capable than the average human being of taking a detached objective and long-range point of view in their approach to problems of this kind. If we can't do that, we shall have to stop bragging about our superior objectivity and about placing our chief reliance on facts in arriving at our conclusions. Can we successfully meet this challenge? I believe that we can and that we must.

It may perhaps be gratuitous, or even in questionable taste, for me to comment upon the recently announced plan of another Society of which I have so little background and so little information at first hand. My only

excuse is that so many seem to be talking about it. I have read the report of the Committee and the definition of professional engineering employees prepared by the Committee and I have listened in on some discussions among members of that Society. From all of this I have an impression, which may be erroneous, but which seems to be held by a good many members of that Society, that the decision was arrived at without benefit of general open discussion. I have tried to understand that definition of professional engineering employees and perhaps with further study I shall be able to understand it, but I believe one may question the practical administrative value of a definition which requires such close study. I have been consoled by the fact that I have as yet found no one else who could understand it. Moreover, it is difficult for me to follow the logic involved in a proposal to set up a union for some people who don't want to join a union.

All of us will watch this experiment with interest and I hope that we shall watch it with open minds. There is always a chance that we may learn something. But if pressed for an opinion as I have been by a member of engineers, at the present time I am constrained to tell them that I believe the experiment is foredoomed to fail because it is so unrealistic. This is a curious commentary to make on the work of engineers who presumably are, by training and inheritance, the world's hardest-boiled realists. Can it be possible that their realism is confined to the field of physical phenomena and that it does not extend into the realms of social and political action? In spite of current evidence to the contrary, I hope the answer to this question is in the negative.

What do I mean when I describe the above noted collective bargaining plan as unrealistic? Well, for example, do you remember the so-called "company unions" and what happened to them? Who provided the real financial support of the company union and why? You will remember the dues were very nominal. Who is to provide the real financial support, indirect to be sure, of the local committees under the plan in question. Again, the dues of the supposed beneficiaries of the plan are very nominal. I won't ask why but some government agency is sure to, sooner or later. It is difficult to make altruistic answers convincing to skeptics, especially when the people furnishing the money are in part members of that class which is clearly ineligible for the benefits of collective bargaining. But suppose there is no difficulty on this point, does anyone really believe that the very nominal fees proposed plus the indirect support in the form of several agents for the whole country, can suffice to hold the line against a union which has its heart set on organizing a given plant?

I do not pretend to be an expert on the existing federal legislation regarding collective bargaining but I have experienced it in some of its workings and I have observed it in others and one thing seems to be reasonably clear and clearly reasonable. The exact nature of the individual's work in a particular organization is a principal factor in determining his eligibility for collective bargaining. Is he working at a trade or is he working in a responsible professional or supervisory capacity? Anyone connected directly and perhaps even indirectly with the management of an enterprise is usually not considered eligible for collective bargaining.

So far as collective bargaining is concerned, professional status depends not upon the possession of credentials to that effect but rather upon the nature of the work performed. You and I know that many licensed practitioners are working and always will work in sub-professional or non-professional capacities. When they are so engaged they will undoubtedly continue to be under pressure to affiliate with the particular collective bargaining unit in their work location. It seems to me this is something about which we should not become unduly excited. Collective bargaining is not necessarily something evil. It is intended to, and does in most cases, perform a useful and necessary function. As a practical proposition, why shouldn't everyone eligible for it benefit by it? It seems to me utterly futile to hope that a separate organization of professional men, (assuming that the organization in mind was restricted to men possessed of professional credentials which is not so in the instance under discussion) working in sub-professional or non-professional jobs could hope to get anywhere by and for themselves through a small, unaffiliated, collective bargaining unit. Things just don't work that way in this life. This is one of the cold, hard facts which appears to have been overlooked. Moreover, it is questionable whether the government agencies charged with the adjudication of collective bargaining disputes would be inclined to recognize such independent units. Even if all of these small units were banded together in some form of international union, their members would not be impressive. Are we, who pride ourselves on being of a practical turn of mind, completely blind to political realities? It may not be out of place to remind ourselves and our colleagues, who are fearful that they may be caught up in collective bargaining processes, of the old and sound political adage, "If you can't lick 'em, join 'em."

In this connection, it is my opinion that, in the case of young engineers starting at the bottom of the ladder, it will be a very useful part of their training for more responsible positions to have been a part of a collective bargaining unit sometime in their career. It will give them an invaluable insight into the problems of the workman from his point of view and into his processes of rationalization. If our young engineers profit from this experience they should be able, later on, very materially to reduce industrial strife, so much of which seems to have been due to lack of sympathetic understanding of the other fellow's problem and point of view.

In the same address by Professor Nold, from which I quoted previously, he says that the National Society should "protect for the engineering profession and all members thereof the right of the individual to contract for his services," and that it should "educate engineers to the realization that the maintenance of professional status is based on the privilege and right of the individual to exercise independent judgment in his work." He repeats these same remarks in his message on the editorial page of the

January, 1944 issue of The American Engineer. I believe they are significant.

The Preamble to the Constitution of our National Society states, "The National Society of Professional Engineers, recognizing that service to society, to state and to profession is the premise upon which individual opportunity must be builded, does hereby dedicate itself as an educational institution to the promotion and protection of the profession of engineering as a social and economic influence vital to the affairs of men and of the United States."

Note that our National Society is an educational institution. Nothing is said or inferred about its being a bargaining agency or a pressure group. To be sure, education is a slow process but it is the only sound method in a democracy. Have we lost faith in the methods of democracy? I hope not.

It seems to me in discussions of this sort it is good to remind ourselves of the purposes for which we were organized. This is not to suggest that those purposes may not be amended as experience indicates to be necessary, but rather that each of our activities currently entered into should be tested against our fundamental objectives to guard against the ever-present danger that we may find ourselves side-tracked without having intended to leave the main line. We claim to be a profession. We aspire to be ranked by the public with the learned professions. It seems to me axiomatic that our aspiration can be realized only if we demonstrate by our words and by our actions that as individuals and as a group we are worthy of professional status.

What is a profession? Webster defines it; first, as an occupation that properly involves education or its equivalent, and mental rather than manual labor and cites as examples the three learned professions; and second, as an occupation or calling involving special mental and other attainments or special discipline and cites as examples editing, acting, engineering, and authorship.

Many persons in the several professions have, from time to time, tried their hand at a more complete definition. Dr. William E. Wickenden, President of the Case School of Applied Science, in an address delivered before the Engineering Institute of Canada in 1941, put it this way:

"What marks off the life of an individual as professional? First, I think we may say that it is a type of activity which is markedly high individual responsibility and which deals with problems on a distinctly intellectual plane. Second, we may say that it is a motive of service, as distinct from profit. Third, is the motive of self-expression, which implies a joy and pride in one's work and a self-imposed standard of workmanship—ones' best. And fourth, is a conscious recognition of social duty to be accomplished, among other means, by guarding the standards and ideals of one's profession and advancing it in public understanding and esteem, by sharing advances in professional knowledge, and by rendering gratuitous public service, in addition to that for ordinary compensation, as a return to society for special advantages of education and status.

"Next, what are the attributes of a group of persons which mark off their corporate life as professional in character? I think we may place first a body of knowledge (science) and of art (skill), held as a common possession and to be extended by united effort. Next we may place an educational process of distinctive aims and standards, in ordering which the professional group has a recognized responsibility. Third in order is a standard of qualifications, based on character, training, and competency, for admission to the professional group. Next follows a standard of conduct based on courtesy, honor, and ethics, to guide the practitioner in his relations with clients, colleagues, and the public. Fifth, I should place a more or less formal recognition of status by one's colleagues, and less formal recognition of status by one's colleagues or by the state, as a basis of good standing. And finally an organization of the professional group devoted to its common advancement and social duty rather than the maintenance of an economic monopoly."

In contrast to a profession, Webster defines a trade as a skilled or specialized handicraft and explains that the term is properly applied to pursuits which are distinguished from unskilled labor, agricultural employment, commerce, the learned professions, and fine arts. The same authority defines a trade union as an organized association of workmen skilled in any trade or industrial occupation formed for the protection and promotion of their common interests, especially the increase of wages, better conditions or shorter hours of labor. Contrast this with our concept of our professional society.

If words are to mean anything in these days of overworked superlatives in the Hollywood manner, it would seem that we can render a service to ourselves and to the public by not abusing them. If the generally accepted definition of a profession fits us, we should use it. If it does not, if we are a trade and if we propose to adopt the practices and methods of a trade with respect to such matters as collective bargaining, let us frankly admit that we are a trade. We cannot be both. Nor can we long straddle the issue. A trade characteristically and perhaps necessarily takes a short-term view of its economic problems; a profession takes a long-range view of these problems and places its primary emphasis on service to society rather than on the immediate economic well-being of its members.

To quote Wickenden again, "The engineer has been the pioneer in the professionalizing of industry, and his task is only begun. Organized labor, it seems, is intent upon gaining a larger voice in the councils of industry; it wants to sit in when policies are made and to share in planning the schedules of production. Many labor organizations not only exercise a direct voice in management, but are also in a position to accumulate immense surplus funds from fees and dues. These funds may become one of the major sources of capital for investments in industry, making labor an important stockholder as well. If any such day is ahead, the middleman of management who can reconcile the stake of the investor, the worker, the customer, and the public is going to be the key man on the team. For that responsi-

(*Continued on page* 24)

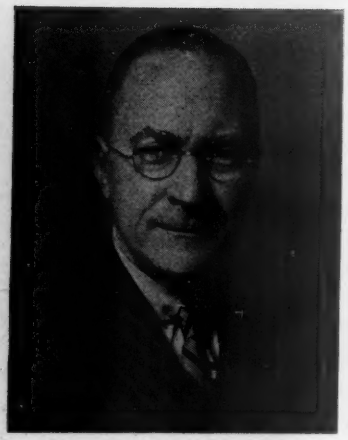
ENGINEERS AND PLANNING

TECHNOLOGICAL PROGRESS AND MASS EMPLOYMENT HAVE DEPRIVED MEN OF INDEPENDENCE IN THE PURSUIT OF LIVELIHOOD

INDUSTRY MUST PROVIDE POST WAR JOBS IF AMERICAN WAY IS TO BE MAINTAINED

Proposals Of Committee For Economic Development

Outlined By THOMAS ROY JONES



THOMAS ROY JONES
President American Type Founders

In an address delivered at the recent annual convention of the New Jersey Society of Professional Engineers, Thomas Roy Jones, President of The American Type Founders, discussed the contributions of engineers to civilization and the aims of the Committee for Economic Development. The address of Mr. Jones is the subject of this month's editorial of The American Engineer.

Civilization has moved slowly through the ages, but there can be no doubt it has moved forward. If we trace its steps we see with each advancement the work of some hardheaded individual who was an enginer of his era. He was the designer—the builder—the man who dealt with material things to make them more efficient. He was the man who made the first hatchets, the first measures, the first wheels. His followers perfected them and learned better ways of using them and life became easier for everybody. Engineers invented and developed boats and carts that made it possible for man to travel to find newer and richer hunting grounds. He developed weapons to make hunting easier. The Engineer has been a great fellow throughout all time. He has had a hand in all that has made for progress.

In the late 19th and early 20th century he let himself go. He has worked fast and furiously at new things. He has invented, perfected, and adapted so many things and civilization has been pushed ahead at such a high rate of speed that it has left the average man just a little breathless. Don Blanding has aptly stated our feeling in these lines:

"We who were born in an earth bound age,
Buggies and autos and ships and trains
Can watch and wonder, but never gage
The hearts of those who were born to planes."

It is difficult for the man who has just about caught up to the horse and buggy era in his thinking to cope with planes that take you across a continent in a night—or with messages that are flung across oceans and continents by radio—or with baffling mysteries of radar.

You have built great cities and made hundreds of people accessible for the work of seaports and railroad centers. Concentration of business in these cities has made for a high degree of streamlined efficiency.

You have designed radios, movies, and tooth paste in collapsible tubes, and permanent waves. Good advertisers have convinced men and women that these things are essential for happiness and welfare, and men work hard to earn the money to buy these things.

You have devised time studies and motion studies and scheduling, scientific fatigue tests to get men to produce things with maximum ease to sell at the lowest possible cost.

Oh, life has become very easy and very simple and very rich because of the work of engineers. But with all the good you have brought about with your labor saving devices, with all the drudgery you have saved mankind, you have aided in taking away from him, periodically, the opportunity for something that means much to him—the need for and the opportunity to work.

There are, of course, more jobs than ever before in history, but most of these jobs are not self-reliant jobs. In the old days when one or two men ran a farm or a furniture business or a store, they managed to keep going even though times tightened up a little now and then. They were often not very rich, but they managed to get along and were never cut off suddenly from all income as were millions of people during the last depression.

The last hundred years has seen great changes brought about by the great inventions and developments of engineers. Few, if any, of the engineers realized that their labor saving devices would bring about specialization and concentration of effort and that these, in turn, would create conditions of job dependency and increasing interdependency between units of the economic system. Yet we can now see that it isn't as easy for a man to earn an independent living with a few tools and the skill of his hands; he must get a job. And if the factory on the outskirts of town isn't running, the grocery store on the corner isn't prospering.

Then you have created another set of conditions which you did not foresee. Engineering has telescoped the world by increasing speed of travel and communications—time is no longer much of a factor.

A business lull in New York in the afternoon means business jitters in San Francisco the next morning. Depressions move rapidly. The whole world acts in unison, through the facilities of communications and transportation. We get an intensified swing in all economic phases, because things move on such a decreased time schedule.

Consequently, through the creation of job dependency and the concomitant condition whereby communication of facts, fears and fancies are instantaneous you have brought about a condition in which millions of people can lose their jobs almost overnight. You have given the world much and surely no one can say, "Let us return to the old days of drudgery—slow travel and no movies on Saturday night." Few of us want to go back.

But in your very giving, you have taken away. You have made life easier for most but more precarious for many. You have created for yourselves by your own acts a challenge. A challenge which says to you "If you are clever enough to create all of these drudgery, time and space eliminating devices, can you likewise be wise enough to devise ways of eliminating the evils which have accompanied them?" This is the challenge,—your challenge—to which I give voice tonight. I do it with the hope that I arouse in you the sense of responsibility which is rightly yours.

Industry and Business have realized that they, likewise, have a challenge and a responsibility which they have not heretofore fully realized. In the hope that what they are doing may stimulate your thinking I shall tell you of the Committee for Economic Development and of some of the background which caused its being.

It was a little more than two years ago that the Japanese descended on Pearl Harbor. They found this great nation in a muddle of unpreparedness. What happened? You and I and everyone else rolled up our sleeves; and went to work. Through cooperation between management, capital, labor and the Government, we have achieved in industry the highest rate of production in the history of the world. This nation needed guns in a hurry, we made them. It needed ships because they were being sunk at a rate faster than they were being built, but we increased the rate of production, and we built what was needed. It needed airplanes and we built airplanes until they clouded the skies over all of the Axis nations. In the course of one short year American industry produced a miracle by the use of its engineering brains. This has become a war of engineering, and American Engineers working under the free condition of democracy have invented and designed and built the necessary things for winning a war. We have now arrived at a place where we can say confidently that we are going to win this war.

Now that achievement was *not* made by a fascist nation —it was *not* made by a communist nation. It wasn't accomplished by a centralized government. It was accomplished through the operation of democratic principles. It was made by groups of individuals, not because they were told to do so at the point of a gun, but because they knew how and had the initiative and the energy and the ambition and freedom of action to do it.

Now why did we do it? Did we believe that democracy was worth saving? Did we believe that freedom of opportunity was worth saving? Did we believe that a life that permits a man to work out his own destiny with his own hands and brains was worth perpetuating? Certainly we did! We who have done this job have worked with faith. We have believed, that efficient work could do the job; and while for a time it looked as though our complacency of the past decade might have cost us our freedom, it took only the challenge of a Pearl Harbor to rekindle the spark that is in the minds of Americans . . . the spark that says, "This job can be done."

Now that we are at the point in this accomplishment where we can say that we someday will achieve victory, can you, can I, afford to sit back and say, "Well, we have done our job, we will let things ride from now on!"?

We don't dare, gentlemen! We don't dare sit back. The toughest job is yet to come: a job far tougher than winning this war. When the war ends and we stop making guns, and ship and tanks—a whole 84 billion dollar business that has employed every available worker will have gone up in smoke. When that day comes, industry will instantly have lost its biggest customer. A customer for an annual volume of eighty-four billion dollars worth of goods: The United States Government. There will be ten million soldiers back needing jobs; there will be twenty million released war workers. There will be fifty-eight millions of employable people, against forty-six millions employed before the war. Two millions of those will be in the army and the fifty-six millions left, through increased numbers and technological progress will be able to produce 40 percent more goods and services than were produced in 1940.

While it is impossible to forecast clearly, we will probably have chaotic economic and political conditions in the United States and throughout the world. The millions from the Armed Forces and from war work will be returning to peacetime pursuits, eager for jobs. They will insist on them—useful jobs with decent pay and ample opportunity for advancement. The public temper will be something to be reckoned with, because the public will demand jobs for all those that are unemployed and the public has been told for the last ten years that "if you can't get a job 'come to Uncle' he will take care of you." The public, if industry does not furnish the jobs, will turn to the Government.

The outlook is not all bad. Peace, when it comes, will find a huge, pentup need and desire for goods. Many billions of dollars of savings will be available to permit people to translate their desire into buying demand. There will be huge production capacities able to produce far in excess of anything that has ever been produced heretofore in peace time. There will be new products and material developments.

The postwar demand that will be developed must be met. We must provide the necessary jobs. Engineering in

industry, business and agriculture must help to do it. And that's only part of it. We have a natural demand for the first period after the war, but after that there will come the time when depression might normally come and we must plan for that also, and we must start planning for it now. But remember, when the war ends, eighty-four billions of dollars worth of business ends. Soldiers and war workers will be out of jobs. Remember that such a time will be ripe for communists and other radicals and graspers for power who will lead the unemployed into the traps of communism or other isms. It will be a time when the hard headed planning engineers will be needed. Remember again, if we do not take the leadership the Government will. It's our last chance. It's the last chance to show the type of National leadership that thinking Americans are capable of showing and should show, but never have shown. It's time for industry to show an increased social and economic conscience and to realize that everything its leaders do inside of the four walls of their offices reverberates throughout the economic structure of the whole country.

We do indeed "have something" here in America. It is the "something" that took a thin and poor strip of civilization along the Atlantic coast in 1776, where perhaps 95 per cent of the people were ill-fed, ill-housed, and ill-clothed by present standards, and developed that strip, in 167 years, into this great nation. No other nation ever did that in all history. It is unique—we call it the American way, the way of democracy. With democracy and our incentive way of life there always will be new goals to reach, new opportunities, new stimulants to people to live fuller and better lives.

It is this faith in democracy, this faith in people themselves to plan for their own future and to make our economy tick, and the desire to preserve for the coming generations this freedom of opportunity that brought the Committee for Economic Development into being. So far as I have studied postwar plans this is the best and most practical one I have seen. The Committee for Economic Development believes firmly that the American people can solve their own problems better than anyone else can solve them, just as Americans always have, and we hope, always will.

All that the Committee for Economic Development expects to do is to stimulate postwar thinking and help in coordinating the plans that individuals and companies make, so as to minimize the time element and save lost motion. To call CED merely a postwar planning group is to catalogue it with those who sit on Mount Olympus and say they know all the answers to all the questions. This isn't CED. CED is made up of plain, down-to-earth citizens who have worked their way up to their present positions. They come from various parts of the country. They do not aspire to power over their fellow man. They are objective and self-effacing. What they are trying to do is help find ways of cushioning the shock of transition from war to peace when peace comes, and to help find ways of producing and selling more goods in the postwar days so there will be full employment, greater happiness, and greater opportunity for all.

The method is simple. CED encourages and inspires planning in the smallest of companies, as well as the largest, and don't think that just because you're with a small company that you are exempt from all this. Your total responsibility is greater than that of the larger companies for the reason that you employ more people. There are in peace time less than 500 companies in this country that employ 1,000 people or more. This is a country of small business. So the small companies must help to carry the great burden.

CED gets down to the grass roots. Small and large businesses in every community in these United States are encouraged to plan for the future. They are asked to give certain basic and simple information which results from these plans. The local group gather this information and correlate the data gathered. The accumulated data provide the bases for Community, State and National planning. It's through that planning, through that interchange of ideas and information that we expect to get this job done; and attain the production, distribution and employment necessary to keep this economy going.

The local groups of business men acting for CED are working through the existing civic and business organizations in their communities, because that is the practical way and CED is a thoroughly practical activity.

The Central organization is equipped to assist the Community groups in many ways. It collects planning experiences and actual plans for Companies and Communities. The best are printed in pamphlets and are available to everyone. It gives advice on planning, furnishes information and maintains one of the brainiest research organizations ever assembled on such problems. Ralph Flanders, the brilliant President of Jones and Lamson (a small company, by the way) and a recognized practical economist; Sumner Schlicter, Professor of Economics at Harvard and other men like these are gathered together to find out what is wrong with our distribution of goods; what causes lie behind depressions and what can be done to make the economic machinery of this country run smoothly; and what business leadership can and should do to assume its rightful responsibility in the National economic scheme of things. All these are subjects of study by these realistic experts.

The evils of unemployment, the evils of maldistribution of goods, the evils of ignorance and of forced poverty *can be licked* over a period of time. This country can produce enough of everything for everybody who is willing to *work* for it, and the height of business prosperity will be realized in the realization of that objective. It can be done only by the unified action of business leadership large and small and it is the belief of those in CED that the thousands of ideas originating in the brains of American Business will do the trick. There is no resource like the ingenuity of American businessmen.

Paul Hoffman, President of the Studebaker Corporation, is Chairman of the Committee for Economic Development's Board of Trustees.

The seventeen other business men who serve under Mr.

Hoffman on the Committee's Board come from all sections of the country, and represent both small business and large. They are independent; they are liberal; they believe in enterprise and are against monopoly; they have dedicated the Committee to serving the public interest and national good.

The Regional Chairman of the Philadelphia Federal Reserve District is Walter D. Fuller. The Regional Vice Chairman in charge of New Jersey is talking to you. For District Chairman for the State of New Jersey there are three of the ablest men in the State. Thomas N. McCarter, Jr. of the Public Service Corporation has the Southern Division. Charles M. Jones of John A. Roebling Sons Company has the Central Division, and the Northern Division is under the leadership of Charles P. Gulick of the National Oil Products Company in Harrison, New Jersey. Each of these men has selected a leader for each of the counties in his area and these county leaders have in most cases selected their Community committees and subcommittees—and here is where the real work is done. This is the point of contact with you and your organization. This is how, as I said before, the CED really gets down to the grass roots.

The local Community Chairmen are coming to the Managers of the business who employ you to discuss plans with them. They are going to ask them what they plan to do, how many people they expect to employ, and what postwar conditions they expect to aid or hamper them in their best effort. It is probable that they will come to you for *your* advice and ask for *your* suggestions. We will try to get down to the few simple elements which will be passed upward to the main Committees where plans for the State and Nation will be based on the plans which are made in your companies. In all your postwar planning remember that the number of people to be employed is important—not that labor should be used wastefully—or that any man should be deprived of the privilege of earning and deserving every penny he is paid.

You have your part in this program of CED.

Engineers who think constructively and practically must come to the foreground and cope with this job of constructing a working plan for the continuation of democratic principles. You have the added challenge of helping mankind adapt himself in a world where you have created job dependency.

For this the engineer has certain deficiencies. He is trained and inclined to organize, formulize and take into consideration tangible things and physical phenomena. He is apt to omit consideration of intangibles such as human relationships, human psychology and sociology.

In approaching this problem it will be necessary for him to broaden his mind beyond the needs required by engineering. He must formulate his plans within the framework of individuals who must be left free to continue in a framework of opportunity.

We must look ahead, knowing that the changes of time have brought one of the most serious and seemingly unsolvable problems.

Yes, Gentlemen, your big problem and the one facing the whole world today, and second only in importance to defeating the Axis is the terrible and terrifying problem of unemployment, maldistribution and forced want.

Through the ages you have changed the employment conditions by all your labor saving developments, you have shown the world your mastership in creating the tools of destruction to defend your Country in a time of war. But while doing this you have created an economy in which peaks and depressions are swift, viscous and world-wide, and conditions of employment which are increasingly dependent. The difficulty is not job deficiency, but job dependency.

The important thing for you to remember is that the only hope for any economic stability in this country is the full, continuous, useful and economical employment of large numbers of people.

These plans must be flexible, for at the end of the war we will face a new world, a new economic condition, new problems which we have never faced before. The plans must be efficient productively for there will be a great need of material goods. And we will find ourselves competing with countries where human welfare has little or no value.

Plutarch once said, "Nothing is easier than to imagine systems for the improvement of nations—nothing harder than to realize them." I certainly do not attempt to stand here and tell you how to provide employment for the millions after the war. I know no panacea,—no magic except the magic which the American people with free hand and encouragement can work for themselves. I simply tell you that it is up to you to share in this responsibility. We must begin to think in terms of preventive economics. No cure-all or panacea or anesthetic, but just as doctors have found preventive medicine to keep babies from having bow legs, we must find the economic formula for keeping stiff props under our social structure.

We will need to use all of our imagination to visualize the solution. We will need the close cooperation of all phases of society if a democratic form of life is to be maintained. Labor, industry, and agriculture must cooperate. For if these three get into a dog fight, it is certain that power grabbers will run off with the bone.

Now there have been a great many plans for employment of people within the past ten years.

Germany solved its unemployment problem by creating a society whose whole purpose was military power. It was well planned and so successful that it is costing us thousands of lives daily. It has no regard for individual man or his freedom. This planning was done by a master politician.

Russia has been very successful planning for the employment of all people who could work. The design there is to increase the wealth and strength of a nation. The individual is secondary in this plan.

We had a rather embarrassingly bad form of homemade planning here in this country before the war when some of our outstanding politicians attempted to solve the

(*Continued on page* 22)

Submitted as:

ITEMS OF GENERAL INTEREST

In Memoriam

GEORGE M. F. RANDOLPH

1884-1944
National Director—NSPE
Past President New Jersey Society

The Engineering Profession has just suffered an irreparable loss in the untimely death of Engineer George M. F. Randolph of Freehold, N. J. on March 3, 1944 at the age of 59.

Engineer Randolph was born in Freehold, N. J. July 22, 1884 and has always made his home nearby.

Upon graduation from Princeton University in 1907 with the degree of Civil Engineer he entered private practice in municipal and highway engineering with offices in Red Bank.

He served as Captain, Engineer Corps AEF from 1917 to 1919 after which he returned to private practice.

George Randolph took an immediate interest in professional engineering registration and was granted license #218 soon after the passage of the Registration Act in 1921. He was made President of the Monmouth Ocean Chapter of the New Jersey Society and National Director from New Jersey to the National Society of Professional Engineers. He served earnestly and faithfully in his efforts to pioneer public recognition in behalf of the registered professional engineer and land surveyor.

His voice is now stilled, but his spirit will long remain an inspiration to "carry on" for the ultimate benefit of the Profession he served perhaps too well at the expense of his own strength and energy. May his soul rest in peace and may his family be given the strength to live on, comforted by the many loving memories of a great man . . . a loving husband and a good father.

(Prepared at the direction of the New Jersey Society)

One can add nothing to the above tribute to an outstanding engineer, citizen and gentleman.

N. C. S. B. E. E.

Presidential Comment

In the March issue of The Registration Bulletin, one notes the following:

A CHALLENGE

By Carl Svensen, President, N.C.S.B.E.E.

Growth is the evidence of life. Nothing can stand still and live. This is just as true of organization as it is of plant or animal life. The Registration of Professional Engineers has had a continuing growth until all but two states now have registration laws. The National Council of State Boards of Engineering Examiners was a necessary outgrowth of the passage of registration laws. The Council is a creature of the State Boards and will function with efficiency and with value to them, according to their own work and according to the effort and cooperation which they give to it. The purposes of the Council are the purposes of the Member Boards. In the present changing world, with many problems and conditions of the future unknown but vital, the National Council as a means of pooling experience and counsel becomes increasingly important. To meet the necessity for cooperation and for service, it is suggested and urged that consideration be given to providing for the necessary growth of the National Council to permit it to function as a full-time organization with adequate finances.

OBJECTIVES

By Carl Svensen, President, N.C.S.B.E.E.

The accomplishments and the services of the National Council are so far beyond what would normally be expected from the amounts received and expended that the National Headquarters could easily be convicted of "service usury"—of doing "too much" or "too little." The large number of Member Boards and the seriousness of the problems facing the National Council in matters having to do with engineering registration are such that it is suggested that now is the time to give consideration to bringing the Council to a truly full-time status with an adequate full-time staff. To do this one of the immediate and necessary objectives would be adequate financing. The Council has been impeded in its progress and in its ability to function by lack of funds. Subscribing members have been authorized by vote of the Council. We have a Committee on Supplementary Finances to consider this problem. Let them have your ideas for consideration.

There are many problems which face the Member Boards that need the services of the Council as a clearing house. Postwar problems are many, not the least of which is that of reciprocal registration. Many soldiers returning to civilian life will find work in other states as well as the engineers taking part in postwar engineering developments over the country.

Other problems have to do with the evaluation of wartime engineering education and wartime experience. The matter of the "Engineer-in-Training" is receiving attention and consideration. The Council should have finances and facilities for retaining the best legal talent for advice and counsel in connection with changes and amendments to registration laws and for suggestions tending toward greater uniformity in the laws. The Committee on Legal Procedure should be assisted in compiling and maintaining a list of court decisions affecting registration and the status of professional engineers. There should be adequate facilities for furnishing information to Member Boards on any and all matters related to engineering registration anywhere in the country. There should be provision for maintaining a complete file of all rosters, forms, instructions, etc., of all State Boards with extra copies available for use or to supply Boards requesting them. There should be provision for a library or file of books, articles, and publications which have to do with engineering registration. A file of material on examinations should be worked up in cooperation with the Committee on Examinations. There should be a record of any actions by any State Boards which might concern any other Boards including cases of violations of ethics, revocation of registration, special actions, meetings, special forms, etc. All of this to be available.

There should be an adequate trained staff to work with the various committees to insure continuity of studies and research with provision for necessary finances to aid the committees. There should be finances to pay an adequate salary for full-time services of the Executive Secretary. There should be adequate finances to provide for visits of the Secretary and President to a selected number of Boards each year, in rotation. Perhaps one or two Boards in each zone each year, for consultation. There should be provision for a monthly issue of an adequate Registration Bulletin.

Engineering Registration has become too important and an effective program of activities for the National Council, especially suited to the postwar period, involves work which justifies placing the Council on a secure basis with a full-time staff to carry on the necessary operations.

More on Engineer-In-Training

Comments Of A Young Officer

That Engineers-in-Training in New York are concerned with their future may be ascertained from the following. The relatively sizeable number who have written Chairman Riedel of the Special Committee charged with guiding and aiding the new Engineer-in-Training Society indicates both interest and approval.

The New York State Society of Professional Engineers, Inc.
Grand Central Terminal,
New York City.

February 21, 1944.

Attention: Mr. John C. Riedel, Chairman Committee on Engineers-in-Training

Dear Mr. Riedel:

To one who is being ordered hither and yon by Uncle Sam's Navy and is running into many new and strange experiences, your letter of December 3 was most welcome. It started trains of thought that go back to a time not so topsy turvy as things are now. It is heartening to hear that the Professional Society is taking an active interest in us Engineers-in-Training.

I shall not be able to take a more active participation in Society affairs than that which can be carried on by mail. However, I should like to be included in the proposed organization of Engineers-in-Training and will be only too glad to take an active part in that organization as soon as I am able.

I submit the following suggestions on how the State Society may help Engineers-in-Training:

1. By publicising the fact to professional engineers throughout the State that there is a sub-professional group known as Engineers-in-Training.

2. By setting up an advisory committee to help Engineers-in-Training gain the required experience they need. This could go as far as aiding them in obtaining positions where this experience could be had. The State Society is in an ideal spot to know where such openings may exist.

(s) Frederic F. Moore, Jr.
Ensign U.S.N.R.
R. F. D. No. 3,
Peekskill, N. Y.

New York 7, N. Y.
February 29, 1944.

Ensign Frederic F. Moore, Jr.,
United States Naval Reserve,
R. F. D. No. 3,
Peekskill, N. Y.

My dear Ensign Moore:

I was very happy to receive your letter of February 21 concerning the work that is being done in connection with the Engineers-in-Training. We appreciate deeply what has happened to our young men in these last two or three years, but we feel that there will be an end to this dreadful conflict and that our young men will again enter into civilian work and seek to advance in our profession. We will be glad indeed to have your help in this development, and we will aid in every way that is possible.

I think your suggestions are splendid, which are, as you have stated, first, "by publicizing the fact to professional engineers throughout the State that there is a sub-professional group known as Engineers-in-Training;" and second "by setting up an advisory committee to help Engineers-in-Training gain the required experience they need. This could go as far as aiding them in obtaining positions where this experience could be had. The State Society is in an ideal spot to know where such openings may exist."

I personally believe that our Headquarters can be made a center for such activities and I shall be glad to recommend to our Executive Board the adoption of the suggestions that you have made.

Very truly yours,
John C. Riedel, Chairman
Committee on Engineers-in-Training

Mr. E. A. Moran, Jr.,
17 Magnolia Avenue,
Jersey City, N. J.

My dear Mr. Moran:

Your letter of February 25th addressed to me as Chairman of the Committee on Engineers-in-Training of the New York State Society of Professional Engineers, is before me. I am glad to know of your interest in this matter of providing something for the young engineer that will be helpful for him in his professional development. We have no printed data upon what has been done, but I can outline what we have undertaken to date.

After long negotiation with the Department of Education and with the Commissioner of Education, a new method of examination was set up in the State of New York. The first stages of the examination are now held directly after the graduation of the young men from the engineering schools. If the young men are successful in passing this examination, they are given a certificate as an Engineer-in-Training, and at a period at least four years thereafter, they will be examined upon the final stages of the examination, and if they pass will be licensed to practice professional engineering.

The State Society has encouraged the young men to form a society of their own, called the New York State Society of Engineers-in-Training. Under a resolution of the State Society of Professional Engineers, as soon as 25 of those who are now Engineers-in-Training signify their willingness and their desire to form an organization, the State Society will help them in forming such an organization, which will be controlled entirely by the young men themselves. A representative of the State Society will sit with the young men to give such counsel and advice as may from time to time be required. It was felt best to let the young men sail their own boats, control their own destinies, handle their own money. The young men will also be invited and encouraged to attend the meetings of the chapters throughout the State and the regular functions of the State Sociey, and will be permitted to participate in discussions, but of course will not have any right to vote.

This outline is what we are seeking to do, and I shall be glad to write you more about the matter should you present any specific questions.

With my best wishes for the success of the movement within your State, I am,

Very truly yours,
John C. Riedel, Chairman
Committee on Engineers-in-Training.

Who Beat New York?

An Ohio Chapter Picture

		Jan. 1 1943	New 1943	Rein. 1943	Dec. 31 1943
1.	Ohio Northern	9	22	9	31
2.	Zanesville	8	8	7	23
3.	East Ohio	12	18	4	34
4.	Franklin County	124	66	63	250
5.	North Central	38	24	13	75
6.	S - O - S	10	4	6	20
7.	Muskingum	12	5	3	20
8.	Jefferson	11	4	6	21
9.	Miami	16	5	6	27
10.	Central Ohio	40	19	12	71
11.	Marion	37	13	11	58
12.	Mahoning Valley	57	30	10	95
13.	Akron	166	49	45	260
14.	Lake Erie	37	9	6	52
15.	Hocking Valley	38	15	2	55
16.	Dayton	80	14	23	117
17.	Northeast	19	2	5	26
18.	Gallia-J.-L.	8	3	3	14
19.	Maumee Valley	40	6	4	50
20.	Canton Reg.	77	15	14	95
21.	Cincinnati	108	7	8	123

22.	Toledo	91	8	12	106
23.	Cleveland	279	17	33	330
24.	Midwestern	43	4	5	51
25.	Springfield	39	3	3	44
26.	Southern Ohio	35	2	4	40
27.	Portsmouth	32	0	0	32
	At Large	8			8
	Totals	1,474	372	317	2,128

Note: The above is a summary of the year 1943 and how we beat New York. We have arranged the chapters in the order of their increase in membership. In the column Dec. 31, 1943 we have all those transmitted from the Chapters on Dec. 31st, 1943 in time for the contest with New York. The deceased members who had paid dues for 1943 were counted as of Dec. 31st, 1943, but those deceased members who had not yet paid their 1943 dues were not counted. All the deceased members were dropped on Jan. 1st, 1944 with the exception of one who had paid his 1944 dues. All delinquent members were dropped on Jan 1st, 1944 and will be called reinstated members when and if they pay their dues.

There may be mistakes in the figures and if there is any of import we will make the necessary correction. Please notify us of any mistakes.

Engineers In Industry

Professional Society Affiliation

An Asset to Engineer and Profession

Comments By Thos. Rolph

One phase of the work of the Ohio Society of Professional Engineers is the rendering of assistance to its members in connection with their professional problems, regardless of whether the members are engaged in private practice or employed in public service or employed in industry. The Society is also determined to build up public appreciation for the engineering profession and thereby enhance the dignity and standing of professional engineers generally. Consequently, the engineer in industry, by and large, owes something to the Professional Society and in the long run will need the Professional Society to assure for him his well-deserved place in public and industry so that it may be a broad, well-rounded organization, capable of dealing with all of the problems of the engineer as a professional man.

It is the purpose of the Committee on Problems of Engineers in Industry to study those problems and to try to obtain helpful answers and to promote helpful actiities within the field of appropriate Society action. In the limited time during which this Committee has been functioning, it has not been possible to do more than discuss these problems in a general and preliminary way among Committee members and to line up certain possibilities for future action. Consequently, the primary recommendation of your Committee is that this activity be continued during the coming year and that the incoming President of the Society appoint a Committee to succeed the present one and carry on this work.

In the nature of suggestions to the incoming Committee and to the Society membership, the following ideas are expressed.

A higher degree of professional consciousness should be urged upon engineers in industry. The more completely an engineer in industry feels himself to be a professional man and a qualified member of the important profession of engineering, the better will he reflect this importance in his work and in the appraisal of him and of his work by management.

Stimulation of professional consciousness should start in the engineering colleges and universities.

The economic welfare of engineers in industry is an important subject and one in which the Society should take a sincere interest and offer real help to the engineer in industry, insofar as such help can be rendered ethically and appropriately. Careful consideration should be given to the many possible methods of rendering such assistance.

It is believed in your committee that the economic welfare of engineers in industry will not be improved by joining any labor union. The Society should continue its efforts to help engineers in the class of professional men rather than labor.

It is important for the Society to become well-informed on the activities of labor unions in connection with any matters pertaining to engineers and it is important to watch carefully the attempts being made by the American Society of Civil Engineers to handle collective bargaining for engineers.

It is suggested that engineers in industry might be served in the field of employment by maintaining at the central office of the Society a bureau of information for engineers in search of industrial employment and for industry in search of professional engineers.

While the building up of membership in the Society among engineers in industry is primarily a function of the Membership Committee, it is nevertheless so closely related to the objectives of the Committee on the Problems of Engineers in Industry that this Committee should take an active interest in it. To that end, it is importantt to take steps toward acquainting engineers in industry with the Society and its objectives. It is important to apply these objectives to the problems of engineers in industry, insofar as possible.

It is recommended that the successor to this Committee consider the preparation of a brochure on the subject of the Society and its relation to engineers in industry. This would serve as a means of bringing the Society to the attention of the engineer in industry and showing him what the Society can do for him and what he can do for the Society.

Such a brochure, or possibly a second brochure, should also appeal to industry management because it is felt in your committee that management has much to gain by placing and keeping employed engineers in the status of members of a profession. A fundamental attribute of professional activity is the use of independent judgment and initiative. It is to the interest of management to see that the application of this initiative, is freely permitted and not hampered by the regulations of any labor organization or of industry itself. The engineer in industry, given professional status and opportunity to utilize freely his professional knowledge and experience, will not remain fixed in value, but will tend to grow in the direction of increasing technical and executive ability, to the benet of both industry and the engineer.

There are many possibilities for Society activity in the service of engineers in industry. Suggestions from the membership will be of value to the Committee and are solicited.

A Study of Registration

Reviewed from Connecticut

Foreword

By Charles F. Scott

In a bulletin entitled A Statistical Study of Engineering Registration in Connecticut the State Board has issued some interesting figures concerning registrants in that state. The data are by William K. Simpson, Secretary. Charles F. Scott, Chairman of the Board presents the Foreword, excerpts from which follow.

"The growth of technical societies has been like the branches of a tree. Specialized groups, while maintaining relationship with the broad and basic engineering societies, have divided and subdivided the profession. 'Who's Who in Engineering' lists about 50 national, 40 state and 100 local engineering societies. In the World Almanack a score or more of national societies are listed; only three, American Society of Civil Engineers (1852), American Institute of Mining and Metallurgical Engineers (1871), American Society of Mechanical Engineers (1880), were in existence in 1880. In the following sixty years, keeping pace with engineering development, about 200 societies were organized. This was an evolution which cannot be underestimated in its effect on the professsion as a whole.

"State Registration or Licensing is recent. Twenty-five years

(*Continued on Page* 24)

Fragments from

STATE & SOCIETY ACTIVITIES

CALIFORNIA

Certifies Seventy-Five

The American Engineer is indebted to Assistant Secretary Pecos H. Calahan of the State Board of Registration for the following information:

"Asa G. Proctor, President of the State Board of Registration for Civil Engineers, has announced the results of a series of Board Meetings, held in San Francisco, Los Angeles and Sacramento during the latter part of January and the first week in February. He reported that certificates of registration had been issued to 62 civil engineers, land surveyors licenses to 3 surveyors and 10 civil engineers were authorized to use the title "structural engineer."

Those to whom certificates were issued are:

Civil Engineers

Atwell, K. T., Seattle, Wash.
Balcomb, Jean B., Palo Alto
Bascom, John D., Pasadena
Brady, William H., Danville
Bressi, Dominic J., San Fran.
Chavez, Ignacio P., San Fran.
Cummins, R. W., Ukiah
Coffland, C. M., Temple City
Conley, John W., Newark
Dunlop, William W., Berkeley
Folkins, R. W., Redlands
Fortney, Allen M., Fresno
Greathead, James W., Los Ang.
Gregory, Theodore R., Pasadena
Halter, R. E., Redding
Hamma, Clarence D., Oakland
Hannum, Warren T., Sacram.
Hands, Stanley M., Oakland
Hart, Clarence A., San Gabriel
Heilmann, John S., San Fran.
Heyser, Alton S., San Francisco
House, A. Lyall, Oakland
Jastram, Burton A., Oakland
Johnson, Donald C., Sacram.
Johnson, Edward P., Chicago
Kambeitz, A. A., Man. Beach
Kessey Ira S., Corte Madera
Landers, Walter, Sacramento
Lowe, L. Howard, Los Angeles
Lyell, Herbert L., Palo Alto
Lynch, Dee, Los Angeles
Lynch, James A., Los Angeles
MacDonald, Jack H., Glendale
McGinness, Gillette G., Sacram.
McGowan, H. W., Los Angeles
McKesson, E. K., Los Angeles
Molnar, Louis A., Culver City
Morgan, John R., Sacramento
Mors, C. W., San Francisco
Muth, V. R., San Francisco
Nichols, T. A., Jr., Oakland
O'Brien, R. P., Redwood City
Phillips, Loren F., San Gabriel
Price, Wright M., Fontana
Richards, Herbert D., Berkeley
Richards, Weldon L., Berkeley
Richardson, John F., Ukiah
Richardson, Robert L., Berkeley
Robbins, Donald T., Los Ang.
Rosenkjar, Einer, Los Angeles
Sanks, Robert L., Berkeley
Slattery, Fremont W., Tule Lake
Stubblefield, G., Sacramento
Stuckey, Robert L., Alhambra
Taylor, H. G., San Francisco
Triay, Roland Jr., Los Angeles
Tumblin, C. R., Berkeley
Wagner, Walter E., Berkeley
Ware, Melvin H., Stockton
Weight, Robert H., Berkeley
White, Vallery, Los Angeles
Wilson, Richard A., Stockton

Land Surveyors

Camp, Rufus S., Salinas
Little, H. R., La Canada
Psomas, George R., Jr., Los An.

Structural Title

Bardizbanian, K., Los Angeles
Giddings, W. A., Los Altos
Griswold, Edgar A., Los Angeles
Harder, Bernard S., Glendale
Knox, Merrill T., Oakland
Kosman, Milton, Piedmont
McCormick, C. W. B., Burbank
Minasian, J. K., Los Angeles
Sayler, F. A., Los Angeles
Shjarback, J. A., San Gabriel

CONNECTICUT

State Registration Board Study

A statistical study of engineering registration in Connecticut, compiled by William K. Simpson, Secretary of the State Board of Examiners, has recently been issued in pamphlet form.

The publication contains a foreword by Dr. Charles F. Scott, Chairman of the Board. Approximately 2000 engineers are presently on the Connecticut roster. Some twenty-three tables of statistical data are included in the Study.

GEORGIA

Receives Charter

On March 6, 1944 the newly organized Georgia Society received from President Nold of the National Society of Professional Engineers its charter. The occasion was the meeting and dinner, of the newest state member unit of the national organization, which took place at the Ansley Hotel in Atlanta.

The Officers and Directors of the Georgia Society are:
President, Alan G. Stanford, Atlanta
First Vice-President, Stephen C. Hale, Atlanta
Second Vice-President, Thomas S. Sloan, Columbus
Secretary, Ray L. Sweigert, Atlanta
Treasurer, John A. Dodd, Atlanta
National Representative, Roy S. King, Atlanta

Members of the Board of Directors

For Two Years	*For One Year*
Domenico P. Savant, Atlanta	Albion M. Gruber, Savannah
Cherry L. Emerson, Atlanta	G. Paul Jones, Macon
Michael J. Blew, Atlanta	Robert S. Newcomb, Atlanta

INDIANA

Again Opposes Kilgore Bill

Quoting from The Indiana Professional Engineer, the following is presented for readers of The American Engineer:

"The Committee has made a study of the twelve sections of this bill and believe that the objectionable features of the bill are so outstanding that it should be defeated.

"Since a number of discussions have appeared in the various technical magazines, including 'The Indiana Professional Engineer,' we will not attempt a complete resume of the bill but will mention a few of the more objectionable features.

"The Act creates an Administrator with dictatorial powers. He is given the power to make rules and regulations having the force and effect of law. He is given the power to adjudge a person guilty of a crime punishable by fine and imprisonment. His authority extends over 'Scientific and technical facilities,' 'Scientific and technical personnel,' and agencies or establishments, with broad definitions as to what these are. A scientist or technologist can be classified as one having as little as 'an aggregate of six months training or employment in any scientific or technical vocation.' The Administrator is given blanket authority for a vast number of purposes, such as control of patents and patent rights, power to finance projects including the purchase and organization of corporations; he is given a number of powers ordinarily resident in the courts. The Administrator is answerable only to the President.

"The Committee believes that this bill is a regimentation of scientists and technicians as well as a number of others, and that such broad grants of power are inimical to the common good.

"The Committee unanimously recommends that the State Chapter of the Indiana Society of Professional Engineers go on

record as being opposed to Senate Bill 702 and that a resolution to this effect be prepared and sent to the senators from Indiana, all the representatives in Congress from Indiana, and to Senator Kilgore, the sponsor of this bill, in the Senate."

NEW JERSEY

March Meeting—Trustees

From Secretary Braun comes the following report:

The Board of Trustees of the New Jersey Society held a meeting at the Roger Smith Hotel, New Brunswick, N. J. on March 10, 1944. Vice President Kissam presided for President Krueger who was absent on State business.

The Minutes of the February 3 meeting were approved as written. The Financial and Treasurer's Reports were also accepted.

Membership Chairman Daily reported that the membership drive was starting to move into high gear. Union and Middlesex Chapters are now reorganizing and can be counted upon to add considerably to the 1944 membership goal.

Salary and Fees Chairman Hehn is organizing his Committee and will have a report to submit at the next Board meeting.

1944 Convention Chairman Higgins reported that the Convention costs will remain well inside the Budget. A complete financial report will be offered at the next meeting.

Budget Chairman Loede offered a tentative Budget for the operation of the Society until the next Board meeting. A detailed Budget will be presented at that time.

Progress was reported for the Constitution and By-Laws and Defense Advisory Committees.

The Mercer Chapter was advised that Papers of the 1944 Convention will be published in the New Jersey Engineer. On their request to have the State Society notify Industry and the local municipalities wherever a copy of the National Registry of Licensed Professional Engineers is placed on file, Mercer was advised that such action should originate through the local Chapter Secretary.

Since the suggested revision of Assembly Bill has already been referred to the Legislative Committee, it was empowered to take such action as deemed proper.

Post War Planning Chairman Clarke is outlining a series of objectives for his Committee. Post War Planning Committees are to be organized in each Chapter area. A Budget will be prepared for printing Papers on this subject which were presented at the 1944 Convention for distribution to the New Jersey Legislature and municipalities in the state. Engineer Jones reported that Newark already has a Central Planning Board in action. Essex Chapter members are invited to participate in their deliberations. Engineer Kramer reported that South Jersey Chapter has a very active Post War Planning Committee in action.

Economic Status Committee Chairman Colwell reported progress for his Committee. They are moving slowly, having due regard to the necessity of finding a solution to this problem which will be lasting.

The Board voted to meet in Trenton on April 14 to celebrate the first anniversary of the organization of Mercer Chapter.

The matter of a semi-annual meeting of our Society was tabled until the April meeting.

Engineers Hamilton, McKee, Weeks, Wise, Wright and the Secretary were appointed to prepare a Resolution expressing regret on the recent death of Past President and late N.S.P.E. Director George M. F. Randolph of Freehold.

Chapter Notes

Essex Chapter will hold its annual Ladies Night on April 19 at the Glen Ridge Club. This is advance notice. See you there!

South Jersey Chapter is pleased to announce that Louis P. Marciante, President of the N. J. State Federation of Labor will address the next meeting on the topic "Organized Labor and the Engineer." This topic is most timely and our Program Committee is to be congratulated on its perspicacity. You are all invited to attend.

NEW YORK

Holds Winter Meeting

The 1944 Winter Meeting of the State Society took place too late for an accounting in the March issue of The American Engineer. Through the courtesy of President Fairman, the Editor has been furnished a brief resume of the proceedings, excerpts from which follow:

The Board meeting was quiet and uneventful compared to that of last year. The report and recommendations of the Executive Committee were adopted without discussion except for recommendation No. 5, the legality of which was questioned by half of the Legal Committee.

The Special Committee on State Society Dues supplemented its written report by a definite recommendation that an amendment to the Constitution be submitted for letter-ballot changing the dues from $5.00 to $10.00. This recommendation was adopted by the Board.

The Board denied the request of Queens County Chapter to call itself the Queens County Society of Professional Engineers.

At the General Meeting on Saturday, discussion of the resolutions submitted was the most extended piece of business. The Society authorized the President to appoint a committee to study and prepare a schedule of minimum fees and salaries for professional engineers in the State of New York, in accordance with the recommendation of the National Society. The motion on this matter also included a prescription for the adoption of the schedule. The Special Committee is to report to the Executive Board and that Board, after approving the schedule, shall submit it to the chapters. Approval by a majority of chapters will then, according to the motion, constitute approval by the State Society. There may be some question as to whether this is strictly according to "Hoyle", but we can worry about that later. The important thing is that the job has been started.

The recommendations of the Committee on Legislation, as contained in bulletin number two recently distributed, were endorsed except for item number six on page number two, in which case the Society reaffirmed its traditional position of neutrality. Endorsement of the Committee on Legislation's recommendations also included three more items in the supplement to bulletin number two. The items referred to are:

Items From Supplement To Legislative Bulletin Number Two

10. Assem. Int. No. 1310—Bennison (Sen. Int. No. 1059—Hastings)

Authorizes public works supt. to employ private engineers, architects and consultants for preparing designs, plans and estimates of structures, rendering assistance and advice in connection with projects and for other necessary services.

Recommended Action: Approve. Ways and Means Committee.

11. Assem. Int. No. 1383—Stephens (Sen. Int. No. 1033—Wicks)

Continues to July 1, 1945 temporary commission for postwar public works planning, strikes out provision for preparation of detailed preliminary plans by municipalities, school districts and district corporations and requires approval by commission, of any application for project as well as of plans.

Ways and Means Committee.

We have been informed that the elimination of the provision for preparation of detailed preliminary plans by municipalities, school districts and district corporations is intended simply to obviate the necessity for such preliminary plans in the case of small projects such as sidewalks, etc.

Recommended Action: Approve.

12. Sen. Int. No. 1243—Seelye

Authorizes county supervisors to create office and appoint county engineer instead of highway supt., with additional powers to supervise construction and maintenance of roads, driveways and drains in and about county owned property and runways, landing fields, grounds and drains of county owned airports, and removal of snow therefrom; amount of bond, salary and term of

office shall be fixed by supervisors.

Internal Affairs Committee.

No provision as to qualifications of such county engineer is made in the above bill. The bill was introduced only last night, and it will be impossible to find out what is behind the introduction of such legislation until next week.

Dr. Irving A. Conroe, Assistant Commissioner of Higher and Professional Education, gave an interesting and informative talk Friday evening with particular emphasis on the Society's responsibility for Engineers-in-Training. An informal question and answer period followed which did a good deal to dispel any impressions that there is something mysterious about the way the State Education Department performs its functions, particularly in connection with the licensing examinations.

At the luncheon on Saturday, Senator Julian B. Erway spoke briefly, but encouragingly, about the professions in their relation to licensing and the Legislature. He was followed by Mr. Holden A. Evans, Jr., Executive Secretary of the New York State Post War Public Works Planning Commission. After receiving The Necktie, President Graf of Ohio talked most convincingly about how you can get things done if everybody puts his shoulder to the wheel.

The following Resolutions were adopted:

No. 1 Resolved, That The New York State Society of Professional Engineers, Inc. in meeting assembled on this twenty-sixth day of February 1944, in Albany, New York, does hereby record in the minutes, its sorrow in the loss of Virgil M. Palmer, and does express to his widow and family, its deepest sympathy.

No. 2 Resolved, That it is the opinion of this Convention that the Society should assume leadership in the State of New York in discussions which involve the propriety and methods of representation of engineers in economic matters; be it further

Resolved, That the Society shall invite duly accredited representatives of other engineering societies functioning in the State of New York, to meet with Society representatives, in order that there may be a full discussion of the problems involved, and be it further

Resolved, That the President appoint a Committee of five to carry out the provisions of this resolution.

No. 3 Resolved, That The New York State Society of Professional Engineers endorses in principle the enforcement of the payment of legally established salaries for employees who are required to hold an unexpired New York State Professional Engineers license and shall use ts good offices to assist the local chapters in accomplishing these objectives.

No. 4 Resolved, That Art. 55, Section 1449, Subdivision No. 6 be amended by deletions, substitutions and additions to read as follows:

"A person practices professional engineering, within the meaning and intent of this article, who holds himself out as able to perform, or who does perform, *As Principal Or As Employee In Responsible Charge,* any professional *(service)* Engineering Work, such as consultation, investigation, evaluation, planning, design, or responsible supervision of construction or operation in connection with any public or private utilities, structures, building, machines, equipment, processes, works or projects wherein the safeguarding of life, health or property is concerned or involved, when such professional service requires the application of engineering principles and data."

And be it further resolved, that Section 1457, Subdivision No. 4, be amended to read as follows:

"Engaging in professional engineering work or land surveying work *(as an employee or pupil of or)* under the *(direction) Direct Supervision* of a licensed professional engineer or a licensed land surveyor, or *(as an employee or pupil of or)* under the *(direction) Direct Supervision* of a professional engineer or land surveyor authorized by subdivisions two and three of this section, *Of A Maximum Of Six Non-Licensed Technical Employees,* provided that said work may not include responsible charge of design or supervision as principal.

Legend—Words in parentheses to be deleted; Words in capitals to be added. (Referred to Legislative Committee.)

Committee To Prepare Schedules

In keeping with recommendations of the Board of Directors of N.S.P.E., the New York State Society has taken steps to formulate schedules of fees and salaries. Following is the presidential action taken in conformance with the decision of the State Society.

To: Messrs. George F. Chism (Tri-County), Chairman.
George M. Bechtel (New York)
Francis X. Bode (Albany)
Charles F. Giraud (Bronx)
Floyd E. LeVan (Niagara)
Charles B. Molineaux (Queens)
Leroy C. Purdy (Schenectady)

Gentlemen:

I hereby designate you as the members of a special committee appointed pursuant to the following motion adopted at the Winter Meeting of the Society:

"Resolved, that the President be authorized to appoint a special committee to study, prepare and present to the Executive Board within a period of three months or as soon thereafter as practicable, a schedule of minimum fees and salaries for professional engineers in the State of New York and that the Executive Board, having considered and approved such proposed schedules or any modifications of them, shall cause copies to be distributed to the chapters for ratification; and be it further

"Resolved, that when a majority of the chapters shall have approved the proposed schedules, they shall thereupon be declared to be the Schedules of Minimum Fees and Salaries of The New York State Society of Professional Engineers, Inc., and copies thereof shall be distributed to all professional engineers licensed by the State of New York and to all public and private agencies and others employing or retaining the services of professional engineers in the State of New York."

This motion was adopted on the recommendation of our National Society Directors who reported that the Board of the National Society, at its last meeting in February, adopted a resolution urging the Member State Societies to take immediate action, looking toward the establishment of an appropriate schedule of fees and salaries in their respective states and suggesting that the schedules adopted be modeled after those of the Ohio State Society in the interests of expedition.

The January issue of The American Engineer, on page 16, contains a directive from the National Society to the member state organizations pertaining to this subject.

Copies of the schedule of the Ohio State Society will be obtained and forwarded to you separately.

It is recognized that while a good deal of the work of your Committee can be done by correspondence, it will be necessary for you to hold one or more meetings; the time and place of these meetings is left to the discretion of your Chairman and I hereby authorize the Treasurer to reimburse the members of your Committee for their round-trip coach carfare incurred in connection with meetings of your Committee. It is suggested that one meeting of your Committee might conveniently be held during the Annual Meeting of the Society in May, at which time it would be desirable that your Committee report progress.

If your Committee could make its final report in time for the June meeting of the Executive Board, it would be most advantageous to the Board and to the Society.

Very truly yours,
James F. Fairman,
President.

Queens Chapter

Reports to Members

The report of the recent New York State Society winter meeting as submitted by Messrs. Kochendoerffer and Lilien is a most complete and well prepared presentation. If space permitted, the same would be reproduced here. Congratulations to the Committee and the Chapter.

Rensselaer Chapter

Following are the officers chosen to lead the Chapter during 1944—President, A. G. Schubert; Vice-President, E. D. Landfear; Secretary, A. F. King.

The Chapter is presently checking its Constitution to test conformance with the present State instruments.

Tri-County Chapter

From the March issue of the Tri-County News comes the following:

Astigmatism

Def.: From the Greek. "A defect in the refractive apparatus of the eye." The eye is the organ of sight or vision. To eye a thing or an idea is "to have intellectual apprehension; to perceive; to understand."

From all of which we deduce that mental and moral astigmatism is the only excuse for a Board of Direction of the oldest engineering society in the United States, at its meeting in Atlanta, Georgia, on October 11, 1943, recommending Local Sections of its Society to amend their constitution and take such other steps as might be necessary to set up in each Section, a Committee on Employment Conditions which could function, when and if required, as a collective bargaining agency for both members of the Society *and professional engineers generally.*

Mental astigmatism because they did not exhibit intellectual apprehension, perception or understanding; moral astigmatism because they possessed not the right, the power nor the authority to dictate to *professional engineers generally.*

It has well been said that intellectual apprehension and perception of "young men going up" is keener than that of "old men going down."

Recognition

"It is generally recognized by the profession that the advancement of its leading members to high positions of responsibility is due, not only to the ability and experience of the men so promoted, but to the high character that the profession as a whole bears for fidelity to the trusts imposed upon them."

The above quotation is taken from the article on Engineering in the New American Encyclopedia.

If you are a member of The National Society of Professional Engineers you will appreciate the truth of the above quotation, but if you are not a member we wish to put the following question to you:

"Is it your aim to qualify for a high position of responsibility and to possess the ability and experience to demonstrate your fitness for such high estate?"

If it is, you should affiliate with the only organization of a national character whose membership is made up exclusively of professional engineers, whose organized object is to create, protect and assure for its members the attainment of public recognition of the profession expressed in the quotation at the beginning of this article; that organization is The National Society of Professional Engineers, which is made up of member State Societies, the State Society being made up of the members of the several local Chapters; hence the way to become a member of The National Society is to enroll in the nearest local Chapter of the State Society. However, if there is no local Chapter in your county, your application will be received by the State Society.

Of course, all of the foregoing information is given you on the assumption that your answer to the question is "yes."

If, on the other hand, your main objective is to secure more pay and shorter hours of work, and you are willing to put on the yoke of collective bargaining and let someone else do your thinking and speaking for you, then, in that case, we suggest that your place is in a union.

Westchester

President Fairman Guest

Attendance at the last meeting reached a high point due to the presence of President Fairman of the State Society. To quote from the "Chapter News":

"President James F. Fairman gave an inspiring pep talk on the opportunity for service to the profession and the public which membership in the Society offers. He urged members to take a more active role, indicating that what is obtained from the society depends on what is put in. Our functioning should be democratic, with a steady supply of new blood, and should not be left to a few "permanent" old-timers. He characterized the A.S.C.E. plan for using labor union technique as being conceived in haste and without the knowledge of its members, and predicted it would fail because it is unrealistic and futile. He stated that engineers as such must have a detached point of view, must demonstrate they are worthy of professional status, and that in a responsible professional capacity are not eligible for collective bargaining. He pointed out that the most useful activity of the State and National Societies is educational. President Fairman also made a plea for increased state dues, inasmuch as the present income is insufficient to employ a full time executive secretary. A paid secretary is needed for legislative matters at Albany, in visiting chapters and in promotional work at headquarters, thus replacing the voluntary efforts of society officers and allowing them more time for considering policies, etc."

OHIO

Society Publication Enlarged

On time and up to the minute describes The Ohio Engineer which in its March issue contains 20 pages of news and notes. Volume 2, Number 3 is a publication that challenges anything of its kind. The American Engineer expresses its congratulations by publishing excerpts therefrom:

President's March Letter

Fellow Engineers:

In starting a new year with a new administration, the thought uppermost in my mind is to make this a successful year for the O.S.P.E. The record we have to live up to is a very fine one. Membership has grown. Service to our members has increased. The financial condition of the Society is excellent.

Performance is better than promises, and so the only promise I make to you is to do the best I can to serve the Society well and constructively this year.

The time available will not permit me to visit all of the Chapters of the Society. I will visit as many as possible and will look forward to seeing many of you at the monthly meetings of the Board of Trustees, at which every member of the Society is welcome.

Engineering is a great profession. Let us be proud of the past and work together loyally for the better world we are all helping to build.

Faithfully yours,
T. W. Rolph.

Notes On O.S.P.E. Board Meeting

At the first meeting after the Convention many new faces were present. Some of them were new officers and, perhaps, some were just curious about Past President Graf's ties they had been hearing so much about. They weren't disappointed for he was displaying one that really caught the eye and the imagination. It was blue and covered with a pattern of red and yellow hexagonal nuts (the kind engineers use). It was the N. Y. tie he had won in the contest and it actually came from Sak's Fifth Avenue. We looked to see if the ever-present handkerchief was there, too, and it was, or rather, they were (it takes two or three, as a rule, to match our Past President Graf's ties).

Engineer Graf said he was able to give the New York Society some good pointers and he in return receied some excellent ones.

Our financial condition is good with a surplus of $517.83 for the month despite the fact the Convention cost the O.S.P.E. $206.27. Total financial assets are $5,894.51.

Who gets the trophy? That's the question now. Hoffman and his committee will have to do their work all over again. The Executive Committee rescinded its action in November regarding Ohio Northern's 1942 membership. Tommy Smull said if Ohio

Northern didn't deserve the trophy they just didn't and that was that.

The convention was a success in most every way. Everyone seemed pleased and by the way the ladies turned out they must have had a good time, too.

Vice President Hale was in the chair presiding for President Rolph who is on vacation in Florida.

Chairman Graf, of Chapter Relations, suggested more regular monthly meetings, better reports to the Ohio Engineer, and closer contact with O.S.P.E. through that very important man the O.S.P.E. Trustee who should be given a chance to report back each month to his chapter. Chairman Salsinger of Deed Description Requirements gave an outline of what the committee is doing and proposed to report in full next month. Chairman Makeever of the Convention sent in a report with recommendations which were accepted with thanks. National Director Kennedy gave his report which is printed elsewhere in this issue.

Executive Secretary Chacey presented the budget, the auditor's report, a copy of the National Directory and new business from the Executive Committee.

Chairman Hale announced three names on a new committee, Salaries of Engineers in State Employment. This committee is named in answer to a request from the Salary Study Commission set up by the last Legislature. Their request is, in turn, an answer to Resolution No. 3-1944.

Engineer Neff, President of the Cleveland Chapter, asked about the cost of living with regard to the salaries of Public Employees as recommended in our Salary Survey. He was referred to the last two paragraphs on page 11 of that Survey.

The Highway Recodification Commission has before it some recommendations relative to County Engineers and Highway Engineers. Further and more authentic information will be presented at the next board meeting.

Chapter Activities

Chapter Activities were not reported in the February issue of the Ohio Engineer, therefore, those reported in this issue cover the first two months of 1944.

Akron—President LaDue reported a fine annual meeting. The attendance was 80 with an average for the year of 70. Mr. J. Earl Gulick, of the B. F. Goodrich Co., was the speaker. A sound color film "How Industry Uses Rubber," together with a display of de-icers, rubber gasoline tanks and lifeboats were also furnished by the B. F. Goodrich Co.

Canton—Secretary Sperow reported a fine annual meeting. The usual reports and elections took place and for entertainment there were two films. One was a sound color film of "Neighbors Down the Road." The other was a technical film, "Frequency Modulation."

Central Ohio—Publicity committeeman Wells and Secretary Dumond sent in 8 and 9-inch newspaper clippings from Newark and Lancaster, respectively. Rollin C. Caley, Executive Secretary of the Ohio Good Roads Federation and Post War Planning Commission, outlined highway construction needs in the nation, state and counties. The meeting was a dinner meeting with 75 members and guests present.

Cincinnati—Secretary LeFeber sent in three full typewritten pages reporting the first dinner meetings of the year. Committees were named and reports given. Following the business session two very interesting talks were given. "Wills" was the subject of Judge Frank S. Bonham of the Hamilton County Probate Court, while Acting Prosecutor for Hamilton County Carson Hoy discussed the activities of the prosecutor's office, the delinquency problems, present crime and what should be done to strengthen the laws to increase the protection of the community.

Cleveland—The Cleveland Engineer reports additions to their By-Laws and many other interesting items. At their annual meeting the auditor's report showed $2,354.85 in the treasury which is only $50 more than one year ago. The speaker of the evening was Carlton Kemper, Executive Engineer, National Advisory Committee for Aeronautics.

Dayton—Secretary Buck sent the office a copy of all their chapter committees for 1944 and an announcement of their February meeting.

Mahoning Valley—Secretary Stoll reported a fine Board of Directors meeting with a long list of Chapter Committees set up in January. For their February meeting he reports that 58 members and guests were present. After the usual business, President Hubbard gave a very interesting talk followed by colored movies giving the production and use of Blast Furnace Slag.

Marion—Secretary Taylor reports a meeting in January when stress was laid on the coming convention and the program for the year. A long list of Chapter Committees was submitted.

Maumee—Secretary Sims reports a meeting on February 25th when the new chapter president Monahan and the new Highway Engineers Section Chairman reported on the O.S.P.E. Convention. The value of increased membership as a guard against the unionization of Engineers was discussed.

Miami—Secretary Pochel reports a (superduper) meeting January 14th in Middletown. The Secretary says over 300, but the newspaper clipping says 350, attended the meeting held in American Rolling Mill Co. Auditorium. "Electronics at Work" was the subject presented by H. C. Jenks.

Midwestern—Secretary McGreevey reports a chicken dinner and the election of officers. The speaker was Paul Boesel, Prosecuting Attorney, speaking on the subject of International Affairs.

North Central—Secretary Lichtenwalter reports their first meeting of the year was a chicken dinner with 70 members and guests present. Fritz Mackey, football line coach of Ohio State, showed movies of the Illinois and Indiana games. A list of their committees was attached.

Ohio Northern—Secretary Stultz reports that the election of officers preceded a talk by Ralph Huston on the work of the Red Cross in connection with the Army. A movie of a moose hunt in Canada was shown.

Southern Ohio—Secretary Barrett reports a dinner meeting. The election results were announced, monthly meetings on the second Monday of each month were set up and local engineering problems were discussed for the Post-War year.

Toledo—Publicity Committeeman Foster reports increased interest with 40 present. Two men from Willys-Overland Company, Butler and Johnson, gave very thorough descriptions of the defense work being accomplished by their company.

Proposed Budget

January 1 to December 31, 1944

	Budget	1943 Exp'd
Rent	$ 500	$ 430.00
Salaries	2,200	1,370.00
Office Exp.	500	405.17
Printing and Stationery	1,800	1,290.17
Telephone	200	160.28
Office Equip.	100	18.03
Travel	600	329.33
Postage	600	496.87
Legislative	100	58.84
Violations	100	103.20
Legal	100	4.25
Convention	200	
Miscellaneous	200	239.26
	$7,200	$4,905.39

Accepted by Board of Trustees

$7,200 were the approximate receipts for 1943.

Included in the above items is Mrs. Weed's salary at $125 per month and Executive Secretary Chacey's salary at $50 per month. The rent is running $40 per month now and increases are expected in several items over 1943 as shown.

Dayton Chapter

From the Dayton Society comes the announcement that the following officers, directors and committees will represent that body during 1944:

Officers

President ..... W. Ray Yount
Vice-President ..... John D. Coleman
Secretary-Treasurer ..... Ross W. Buck

Directors

Alfred W. Kimmel ..... (Past President)
Paul E. Smiley ..... Elected
Walter K. Jamison ..... Elected
Louis E. Hyll, Junior Rep. ..... Appointed

Delegates to Ohio Society of Professional Engineers

John F. Hale ..... Appointed
H. S. Price, Jr. ..... Appointed

Committees

Legislative
Parker S. Bookwalter, Chr.
Fred J. Cellarius

Budget, Audit, Finance
E. F. Stansberry, Chr.
T. H. Williams
B. A. Wettig

Membership
W. K. Jamison, Chr.
J. B. Alexander
T. H. Williams
Wm. H. Brabson, Sr.
R. F. Ehler

Junior Membership
Louis E. Hyll
Byron W. Nelson

Public Relations and Publicity
Leo F. Flotron, Chr.
Charles H. Shook
L. M. Dissinger

Constitution and By-Laws
R. F. Ehler, Chr.
Gayle B. Price

Professional Practices
C. H. Eiffert
Robert H. Ball
Charles H. Shook

Picnic
P. E. Smiley, Chr.
W. W. Morehouse
Bernard Seitner
Clarence H. Butterfield
Roland A. Bohling

Program
E. F. Stansberry, Chr.
Leo F. Flotron
B. A. Wettig

Registration
P. E. Smiley, General Chairman
O. B. Reemlin, Public Utilities (R. P. Wuichet)
H. M. Kline, Sr., Public Serice (Robert H. Ball)
H. S. Kline, Industrial (Robert C. Marsh)
R. L. Woolpert, Professional Practice (Clarence H. Butterfield)

PENNSYLVANIA

New Registrants

The American Engineer acknowledges with appreciation the release from Secretary Nickles of the Pennsylvania State Board of Registration, which lists some forty-seven registrants.

Civil Engineers

Archer, Arthur A., Pittsburgh, Pa.
Baggaley, Walter, Cleveland, Ohio.
Berger, John N., Pittsburgh, Pa.
Blackburn, Robert A., Pittsburgh, Pa.
Champlin, George D., Highland Park, Pa.
Charles, John R., Pittsburgh, Pa.
Cliffe. W. R., Hershey, Pa.
Connelly, Vincent P., Harrisburg, Pa.
Daland, Elliot, Philadelphia, Pa.
Dewey, Ralph C., Connellsville, Pa.
Goldman, Perry J., Philadelphia, Pa.
Greene, Donald L., West Reading, Pa.
Jones, E. E., Knoxville, Tenn.
Kuhn, John, Upper Darby, Pa.
Lewis, Samuel, Allentown, Pa.
Madden, James P., Bethlehem, Pa.
Martin, G. G., Greenville, Pa.
Martin, R. L. A., Kingsport, Tenn.
Miller, Chas. W., Jr., Pittsburgh Pa.
Neilan, Francis G., Rochester, Pa.
Oesterreich, Edmund W., Pittsburgh, Pa.
Orr, Albert S., Trevose, Pa.
Paar, Oscar H., Pittsburgh, Pa.
Ofotzer, Edmond, Elkins Park, Pa.
Pugh, Clarence K., Philadelphia, Pa.
Purchase, Roy W., Pittsburgh, Pa.
Reimer, John J., Aspers, Pa.
Rice, Walter O., New York, N. Y.
Roberts, John E., Philadelphia, Pa.
Rogers, Edward L., York, Pa.
Sahm, Paul A. B., Pittsburgh, Pa.
Schofer, Carl H., Bethlehem, Pa.
Schweitzer, George E., Harrisburg, Pa.
Senior, F. C., Bethlehem, Pa.
Stone, Courtney L., New York, N. Y.
Stone, Roy, Washington, D. C.
Varney, Wilbur R., Center Line, Michigan.
Voorhies, James A., Connellsville, Pa.
Wagstaff, Robert R., Haverford, Pa.
Wallace, Robert A., Venetia, Pa.
Waterfill, Robert W., New York, N. Y.
Witmer, John D., Harrisburg, Pa.
Woomer, J. W., Wheeling, W. Va.

Surveyors

Heller, William M., Pittsburgh, Pa.
Hufman, Lloyd W., Johnstown, Pa.
Mudge, Emery O., Wellsboro, Pa.
Walker, Albert L., Finleyville, Pa.

Harrisburg Chapter

"Sparks" carries the following interesting note:

The Harrisburg Regional Planning Committee recently named a committee to confer with "the proper authorities," relative to the desirability of widening certain downtain streets in Harrisburg. The membership of this committee consists of a lawyer, a real estate operator, an architect and two businessmen. Why is there no engineer member? We, as engineers, definitely should have representation in conferences of this nature.

Ed. Note—Harrisburg—Such is common practice in nation, state and community. It is time engineers took action. Legislation, criticism of those who appoint such committees and professional comment on some of the results are suggestions.

Engineers And Planning

(*Continued from page* 13)

problem and gain a few votes by paying people to do useless work. The W. P. A. plan only robbed man of the dignity of honestly earning a living. The War with its need for full production has taken every available man to fight or produce war goods. American workers have regained their self-respect.

You are now faced with developing a new plan that will fit the needs of Americans in a greatly changed world. It must be a plan that encourages the individual American to think for himself as he has always done—but it must go a step further and keep alive in his breast a social responsibility that is also American.

War has taught us the value of working together to whip the common enemy. Now is the time for you engineers with your practical knowledge of planning to set your minds to the most important problem that faces the nation. This is planning for the employment and the betterment of living conditions for human beings. We must in some way design a modern economy in such a way that man may not lose the dignity of doing worthwhile jobs to justify his existence and his earnings. People must be shown that it is possible to buy the good things they want and need at fair prices—only if they themselves produce to fullest capacity.

Opportunity is before you—opportunity to do greater things than you have ever before known—opportunity for service—opportunity for accomplishment. The Nation will one day judge whether you had the brains—the will—the vision—the guts to grasp it.

The Future Of Engineering

(*Continued from page 9*)

bility, the finger of destiny points to the engineer. This makes it all the more urgent that the engineer, while using every opportunity to gain a discriminating and even a sympathetic knowledge of the labor movement, should avoid being sucked into it by the lue of a quick gain in income and in bargaining power."

If we are big enough to seize the opportunity which is before us, we shall not only render a service to society but we shall, incidentally thereto, attain that degree of public recognition and economic welfare to which such service will entitle us.

There is really nothing new under the sun in the way of human problems. They appear in different guises but they are the same old problem. Two thousand years ago a voice was lifted above the clamor of the crowd, "Seek ye first the Kingdom of God and his righteousness and all these things shall be added unto you." Human experience through the ages has shown that this philosophy will work and that its application results in the truly abundant life. If we are sincere in our profession of being a profession, what more should we desire?

The Role Of The Engineer

(*Continued from page 6*)

and distribute traffic for the major air lines. A most important commercial development after the war will be the growth of the air-express business. The engineer will be concerned with a completely new conception of the requirements for airports and airways, and the integration of airport development into the general transportation picture. The engineer will have the development of facilities for the transfer of freight between planes and trucks and experimentation with mechanical handling facilities for the loading and discharge of freight. Large regions in North and South America, now lacking transportation connections, will be opened for development. The helicopter will change the residential and commuting map and will stimulate a further decentralization of suburban life. For private flying, the engineer will be planning a multiplicity of flight strips and service stations.

For new techniques, new materials, and new applications, and for improved quality in post-war products, there will be a large program of reconversion and enlargement of existing plants and the planning and building of new plants. Wartime experience with "controlled condition" plants will stimulate the building of new plants embodying air-conditioning and a controlled plant environment that promotes efficiency and accuracy.

There will be an immediate expansion of home construction to take care of the accumulated housing shortage and to provide the new improvements that the public will demand. Home architecture will be transformed by new ideas in heating, lighting, and air-conditioning. Radiant heating systems will be introduced, with the entire wall area or floor area a giant radiator, or with electric heating fixtures pouring forth infra-red rays at the touch of a switch. Residential architecture and setting will also be influenced by the development of the helicopter for personal transportation. To make improved housing accessible to all, prefabrication will reach a high stage of development.

The resources of the engineer will be enlarged and his resourcefulness will be stimulated by new materials and new processes. Light metals, synthetic rubber, new combinations of materials, laminated wood, plastics, powder metallurgy, and new alloys, together with welding and new bonding methods, will influence new construction and new plant layouts. The war emergency has inspired advances in the art of making alloy steels in open-hearth furnaces. The light metals, aluminum and magnesium, will be available in larger quantities and at lower cost, and their alloys will be in a competitive position as structural materials. With government investment, the production of magnesium in the U.S. has been expanded from 17,000,000 pounds in 1941 to 500,000,000 pounds in 1943—a thirty-fold expansion. Aluminum production has also been greatly enlarged, and its cost has been brought down. With aluminum alloys weighing 1/3 as much as steel, and with magnesium alloys weighing only 1/5 as much as steel, the light metals enter the field for many applications in which steel was formerly used. The development of powder metallurgy opens other fields of improved technology, with very substantial saving in materials, time, and labor. Many parts of intricate design that formerly required hours of skilled machining per unit are now turned out in 20 seconds. Batteries of machine tools were formerly required to turn out the same parts. "Damascite" iron parts, made of powdered metal, have a tensile strength of 130,000 pounds per square inch. Soft metal bearings weighing 100 pounds, and precision parts so hard that they will cut glass are quickly turned out. War needs have stimulated progress, and post-war needs will find multiplying applications for the new materials and the new techniques.

A substantial volume of construction in foreign countries through American aid and through the investment of American capital may be expected. The engineering know-how of American builders, whose prestige has been enhanced by the war, will be in demand abroad for planning, design, and execution. Building operations in foreign countries will often be done by local building firms and local labor to assure good will for the enterprise, although American engineering skill will be used extensively.

Men can fight and destroy for a time but they can build forever. In the post-war era, the engineer will play his part in making life more livable and the world more beautiful.

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State & Society Activities

(*Continued from Page* 16)

ago four states had such laws; in 1934, the year before the Connecticut law was passed, there were only 28; now all but Montana and New Hampshire have licensing laws. The territories of Alaska, Hawaii and Puerto Rico, the Philippine Islands and all the provinces of Canada, also, have licensing laws. If the technical societies be considered as vertical divisions of the Engineering profession then Registration is a horizontal stratification separating those deemed competent to practice Professional Engineering from those who have not attained that competency.

"Without considering what may be desirable in coordination or adjustment of these groups which would be appropriate in a unified Profession, it is worth while to note the relation of individual engineers to the several organizations. This may reveal some basic facts as to the Engineer and his Profession."

* * * *

"Scientific and technological development, engineering education, engineering societies, engineering registrants are all moving forward. Engineering is in continuous, progressive evolution. Its ever expanding range is well indicated by the inscriptions on two medals awarded engineers for distinguished service; the A.S.M.E. Medal—"What is not yet, may be"; the Lamme Medal—"The engineer views hopefully the hitherto unattainable."

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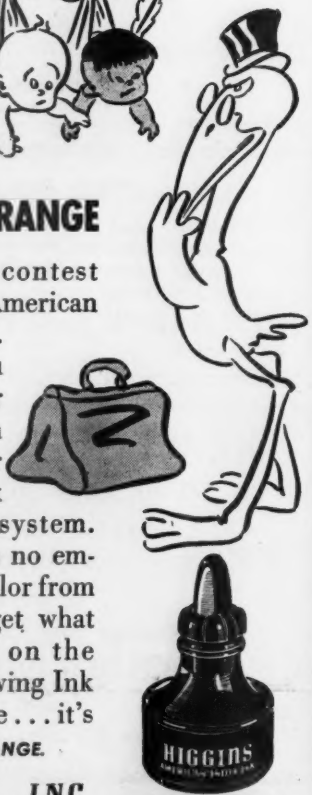

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WHAT'S NEW

And Coming In The Whirl of Change

(News from industry — gathered by the publisher)

BLAW-KNOX PILOT PLANTS FOR CHEMICAL PROCESS DEVELOPMENT

Based on some 200 odd pilot plants designed and built by them, process engineers of the Blaw-Knox Company have formulated a theory of a modern stepwise method of process evolution which, they contend, if basically followed, will permit new processes to be developed from the laboratory to full-scale commercial production in the shortest time, with a minimum monetary risk, and with the most satisfactory final results.

While much of their thinking is, necessarily, neither new nor startling, it is believed that this is the first time a concise yet complete theory as to a logical method of process development has been presented in print. It is an exceedingly difficult thing to set forth a workable theory covering a subject as complex and as studded with variables as this and while some may disagree with a few of their conclusions, they are generally interesting. Some chemical engineering curricula are beginning to attack the subject of process development from one angle or another so recent graduates will find familiar ground while those who have been practising engineering for a couple of decades will be interested in comparing this theory with their own practice. Incidentally, Blaw-Knox engineers are asking for criticism and comments as they are interested in learning to what degree others agree or disagree with them.

Lack of space prevents a presentation of their theories without distortion; suffice it to say that a sequence of steps is outlined for the development of processes:

Step 1—Laboratory Research
Step 2—Product Evaluation
Step 3—Preliminary Process Studies
Step 4—Preliminary Engineering Studies
Step 5—Pilot Plant Studies
Step 6—Commercial Plant

It is granted that this series or division of the usual process development stages is a more or less arbitrary one and a greater or lesser number of steps could well be selected. The point is also made that work on two or more of these stages may be carried on concurrently or that in occasional cases is may be possible to omit one or more stages, the most important point being that the results obtained in each stage must form a sound technical and economic basis for continuation to the next stage.

To many, the most striking aspect of this theory of process development is that, in the fourth step, the ultimate commercial plant is visualized and considerable design work done on it before the pilot plant is designed and built, the pilot plant design being predicated on the necessity of proving the process and furnishing all data that will eventually be needed to design a successful commercial plant.

In addition to tackling first things first and proceeding in a logical and rational manner, this theory of process development takes pains to ensure team-work during all stages between the chemist, the chemical engineer, and the operator thus providing the best possible basis for the best possible plant.

All in all, readers will find this catalog No. 1957 interesting and thought provoking. It is a 24-page booklet, in an attractive format, and is copiously illustrated. Copies may be secured by addressing: The Blaw-Knox Company, Pittsburgh, Pa.

Mr. H. S. Hart, Secretary-Treasurer of the Southern Arizona Molybdenum Corporation, 151 Water Street, New York City, announces a new product known as "Battleship Plastic Cement" which stands severe cold weather without cracking and extreme hot weather without bleeding. It is considered ideal for mending holes and crevices in roofs and also due to its ability to withstand severe heat it is considered ideal as a tank lining used in the chemical and plating industry. The United States Navy is using large quantities of this material for coating the decks of battleships. It is sold on a seven-year guarantee basis.

(Continued on next page)

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Its impact on war production has been tremendous. Parts of intricate machines can now be drilled after hardening, insuring accurate matching of holes at assembly. Last minute engineering changes can be made after parts have been hardened. Dies can be drilled after full hardening when changes are necessary. High speed steel tools, such as hard-to-get broaches, can be drilled and repaired, when broken.

These drills are made in the full range of usual twist drill sizes. If interested, the manufacturer, Black Drill Company, 1400 E. 222nd St., Cleveland 17, Ohio, will send an informative handbook upon request.

Before "rifle drilling"—done after hardening to insure a perfectly straight hole—the Rockwell 60 C case of this Rolls-Royce camshaft is penetrated by a "Hardsteel" drill set up in a lathe.

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